JULY '56

MODERN TEXTILES

MAGAZINE

Specializing in Rayon and Synthetic Fibers since 1925

FIBERS

FABRICS

FINISHES

McGregor's HARRY and BILL DONIGER -- last year $17 million for fabrics --

Story on page 31

THIS MONTH'S SPECIAL FEATURES:

Nylon vs. rayon in tire cord
How silk is processed today
Spun-dyed rayon on cotton system
Evenness testing for worsted yarns

AND 14 MORE TIMELY ARTICLES AND EXCLUSIVE REPORTS

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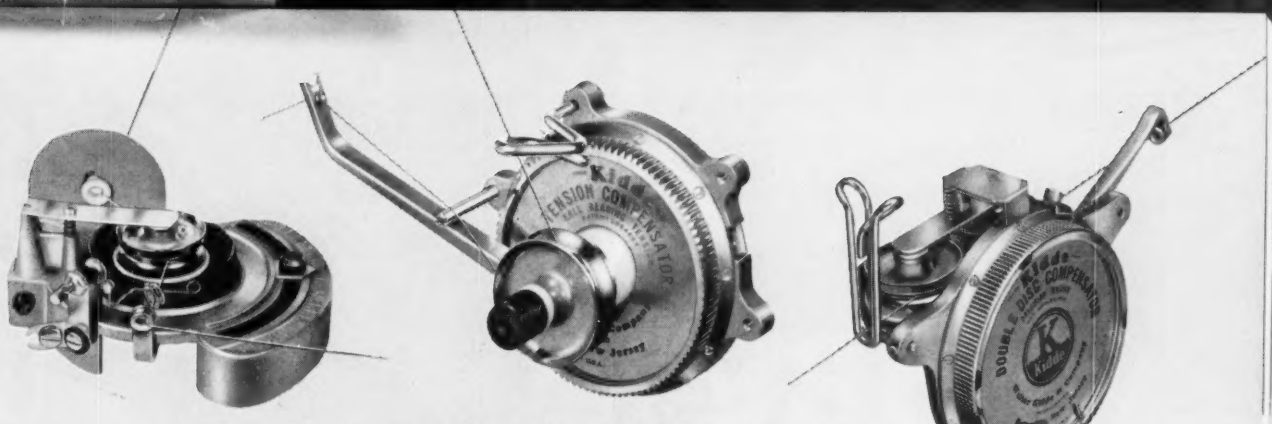

Shown are Standard, Double Disc and Warp Tension Compensators manufactured by Walter Kidde & Company, Inc., Belleville 9, New Jersey. All use AlSiMag guides.

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AlSiMag tension posts and eyes are standard equipment on high quality Kidde Tension Compensators. Important advantages for this and dozens of similar applications:

Superior Wear Resistance. AlSiMag guides are hard and homogeneous. Wear is extremely gradual . . . can hardly be detected . . . simply reveals new surfaces exactly like the original.

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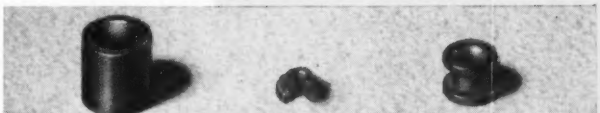

Kidde No. 202373 AlSiMag No. GE-22176 | Kidde No. 240844 AlSiMag No. GE-27890 | Kidde No. 202055 AlSiMag No. GE-20757

You are invited to check these facts! See for yourself how AlSiMag guides can improve your processing. Free test guides from our sample bins. Custom samples at reasonable cost.

These are the AlSiMag guides (approximately actual size) used so successfully in Kidde Tension Compensators. Material is AlSiMag 193—a conductive composition useful for dissipating static. Replacement guides can be ordered for immediate shipment from Walter Kidde & Company, Inc. The same guides in 193 or other AlSiMag materials may be ordered from American Lava Corp.

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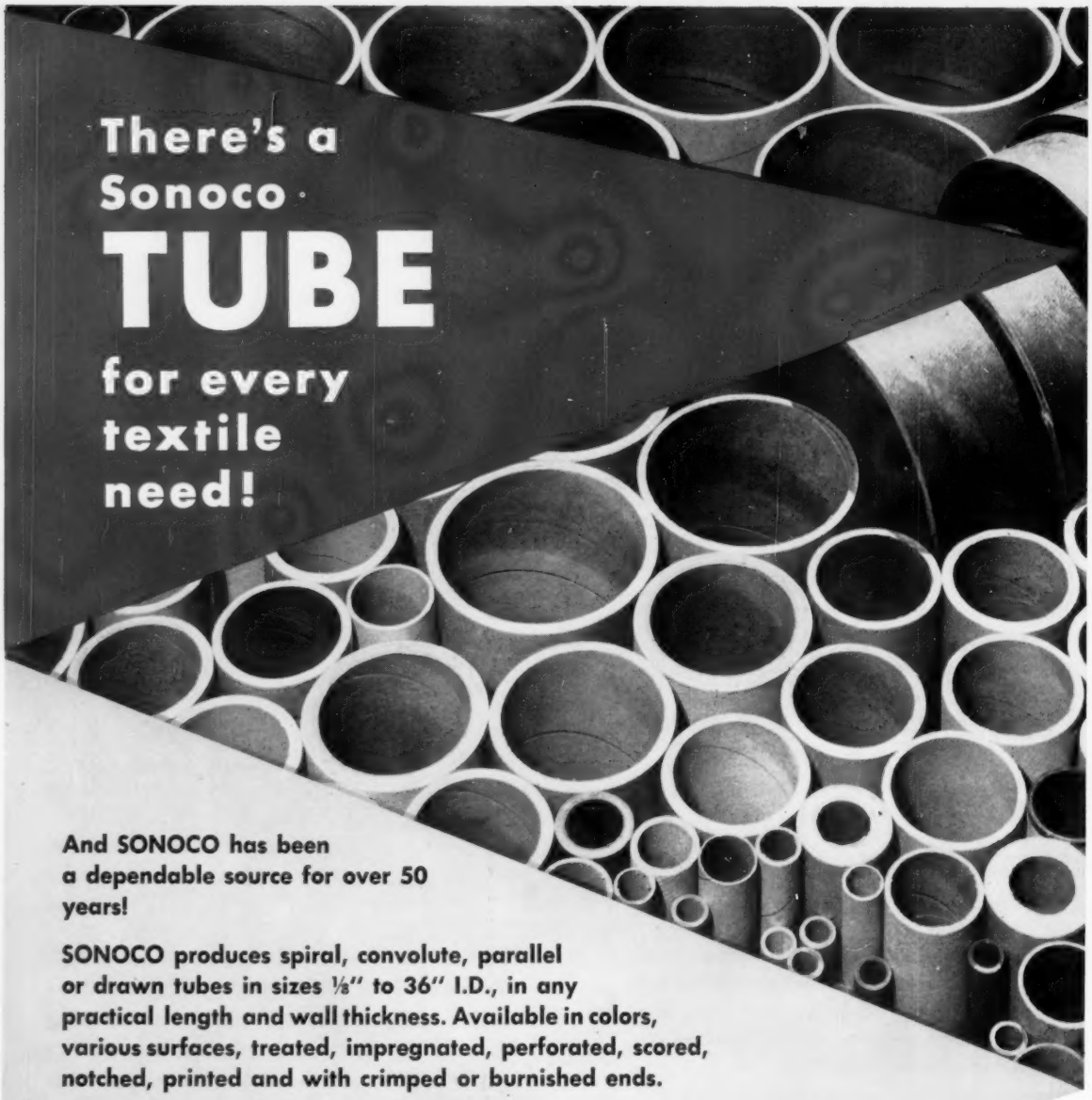

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July, 1956 Vol. 37, No. 7

Modern Textiles Magazine
Established 1925

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Subscription Rates: North and South America and U. S. Possessions, one year $5.00; all other countries, one year, $8.00. Postage prepaid by the publisher. Single copies (current issue), 60 cents.

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Business Publications Audit of Circulation, Inc.

Entered as second-class matter at the Post Office, Manchester, N. H. Editorial and Circulation offices at 303 Fifth Avenue, New York 16, N. Y. Publication offices at 215 Canal Street, Manchester, N. H.

(Originally entered as second-class matter at the Post Office, New York, N. Y. August 20, 1925).

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The Principal Trade Groups

Rayon and Acetate Fibers Producers Group ..... Empire State Bldg., New York

National Federation of Textiles, Inc. ..... 389 Fifth Ave., New York

American Association of Textile Chemists and Colorists ..... Lowell Techn. Inst., Lowell, Mass.

American Association for Textile Technology, Inc. ..... 2 Park Ave., New York

Silk and Rayon Printers and Dyers Ass'n of America, Inc. ..... 1450 Broadway, New York

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Textile Distributors Institute, Inc. ..... 469 Seventh Ave., New York

American Rayon Institute ..... 350 Fifth Avenue, New York

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Avisco Has Crimpable Fiber

A new crimpable fiber is currently reaching commercial production at the American Viscose Corp. The new fiber is handled as a regular fiber but develops a permanent crimp when wet with water. At the company's recent annual meeting, Dr. Herschel H. Cudd, vice president, stated that the new fiber has long been desired by the textile industry and should have a "great potential market."

Other new projects at American Viscose, according to Dr. Cudd, are a super-strength tire yarn, now in commercial production; a new viscose textile filament, spun-dyed for carpets; an improved rayon staple with greater wet strength for industrial uses; and the expansion of the color range of spun-dyed acetate yarns.

Also ready for semi-commercial production is a new fibrous rubber product which is porous, non-skid and tear-resistant. So far it has been used successfully as a rug underlay. Other applications are under development.

New Merger Shaping Up

Directors of Dan River Mills, Inc. have given formal approval for officers of the company to conclude negotiations to acquire stock of Iselin-Jefferson Co. and Iselin-Jefferson Financial Co. The deal also includes Woodside Mills, Greenville, S. C., in which Iselin-Jefferson is majority stockholder.

Dan River officials have also been discussing with representatives of Alabama Mills acquisition of that company. All three companies are expected to continue their operations as separate organizations. Total volume of the three would be $160,000,000 yearly. Commission and factoring volume would bring total sales to about $200,000,000. Total spindles would be more than 800,000 and looms 9,000.

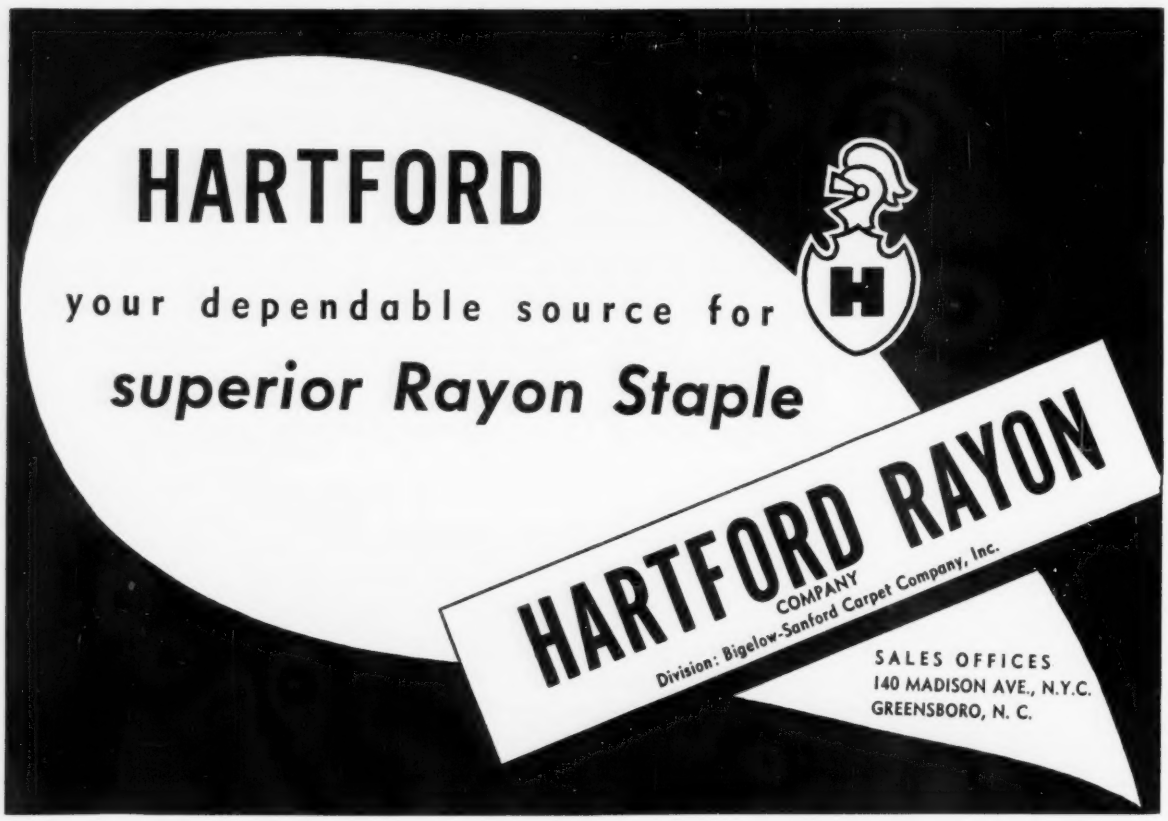
Signing of Acetate Plant Contract Between Acetafil, S. A., Havana and Industrial Plants Corporation, Zurich, April 11, 1956

Signing the contract: Dr. Arturo Martin de Nicolas, President of Acetafil S. A. On his right, Mr. Ralph S. Von Kohorn, Vice President of Industrial Plants Corporation and, on his left, Mr. T. E. Vance, Foreign Sales Representative of Eastman Chemical Products, Inc.

New Acetate Plant for Cuba

Industrial Plants Corp., Zurich, Switzerland, and Acetafil, S.A., Havana, Cuba, have signed a contract to produce acetate yarns and fibers. Acetafil S. A. is controlled by Dr. Arturo de Nicolas, president of Textilera Mayabeque S. A., one of Cuba's largest textile companies. Industrial Plants Corp., the seller of the "packaged" plant to Acetafil S. A., is owned jointly by the Von Kohorn interests of New York and Fried. Krupp, Essen, Germany.

The Cuban acetate plant, scheduled to go into production the latter part of 1957, will produce 6 million pounds of acetate yarn and staple annually. The plant and its machinery will be designed by Von Kohorn International Corp., New York. Eastman Chemical Products, Inc., Kingsport, Tenn., a subsidiary of Eastman Kodak, has entered into long-term contracts with Acetafil for the supply of raw materials and of technical assistance.



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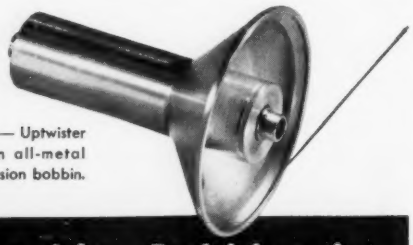

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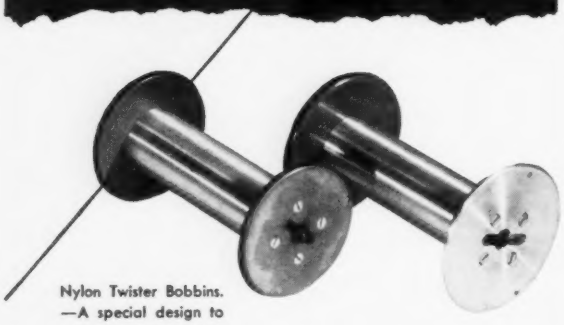

Nylon Twister Bobbins. —A special design to withstand the high pressures of nylon.

Probably you are now—or soon will be—buying new high speed bobbins. Whether you are concerned with larger "packages," higher rotating speeds, or newly developed synthetic yarns—Lestershire Bobbins by National are worth your study, for these reasons:

First, because quality and price are proper—but not excessive—for a particular application. By buying just the precision you need, you can make important long-range savings.

Second, you will find Lestershire representatives *helpfully inquisitive* about your processes. They're as willing to learn about your specific problems as they are to supply you with valuable field and laboratory experience. Too, they take special pride in seeing that you receive prompt delivery and continued service from nearby supply houses.

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NEW DIMENSIONS IN DESIGN AND SERVICE TO THE TEXTILE INDUSTRY

Cubans Charge Celanese with Dumping

HAVANA—Formal dumping charges against Celanese Corp., of America and its subsidiary Panamcel, S. A. have been brought before the Cuban Ministers of Finance and State and the Technical Tariff Commission. In support of the charges evidence has been introduced that Celanese and other U. S. producers named in the complaint are selling in Cuba the same yarn deniers at prices as much as 20 cents per pound under their officially published prices in force in the U. S. Complainant is Compania Rayonera Cubana, S.A., Cuba's only producer of rayon filament yarn.

Under Cuban law, the Government has the power to impose countervailing duties "in an amount equal to the difference between the depreciated value and the actual value of the merchandise in cases where it is verified that an imported product is being sold in Cuba or offered for sale at a price notoriously less than the market value or below cost of production."

Article VI of the General Agreement on Tariff and Trade devoted to anti-dumping and countervailing duties recognizes that dumping is to be condemned and authorizes the establishment of anti-dumping duties in cases where such dumping causes or threatens material injury to an established injury or materially retards the establishment of a domestic injury. GATT was ratfied and put in force by the Cuban Government in December, 1947.

The complainants in Cuba maintain that under Cuban law and Article VI of GATT, Celanese and its subsidiary are practicing dumping and they have asked immediate application of anti-dumping duties.

Teflon Used as Facing in Bearings

The Du Pont Co., has announced that their tetrafluoroethylene fiber, Teflon, is now being used to face bearings and suspension joints of automobiles by the American Metal Products Co., Detroit. Use of this slippery fiber is said to reduce friction by more than 50 per cent in comparison with the standard lubrication of suspension joints. According to the company, the possible elimination of conventional lubrication in many types of bearings through the use of Teflon is foreseen.

Burlington Buys Raeford

Pacific Mills, a subsidiary of Burlington Industries, has acquired plants of Amerotron Corp. in Raeford, N. C., and Clarksville, Va. These plants will continue their present operations as a separate and independent division.

Merchandising will be under a new company, Raeford Worsted Corp., with Ely R. Callaway, Jr., as merchandising manager; George Staff, sales manager, men's wear; Carl Wiedemann, sales manager, uniform fabrics, and Norman Duberstein, styler. E. H. Hines is in charge of manufacturing at the two plants.

Parks-Cramer, White Merge

Parks-Cramer Co., Fitchburg, Mass., manufacturers of air conditioning equipment, has acquired the stock of White and Co., and SpinSaVac Corp., according to an announcement last month. White and Co., also manufactures air conditioning equipment, and in 1954 developed vacuum end collection equipment. SpinSaVac Corp. was formed by the owners of White and Co. in December, 1954.

Under the new arrangement, White-SpinSaVac fabricating facilities in Charlotte, N. C. will be devoted almost exclusively to vacuum end collection and creels, transferring White's air conditioning work to Parks-Cramer. Both White and Parks-Cramer are currently completing additions to their Charlotte Manufacturing space. In the future, sales and installation will be handled by Parks-Cramer with specialized help from SpinSaVac.

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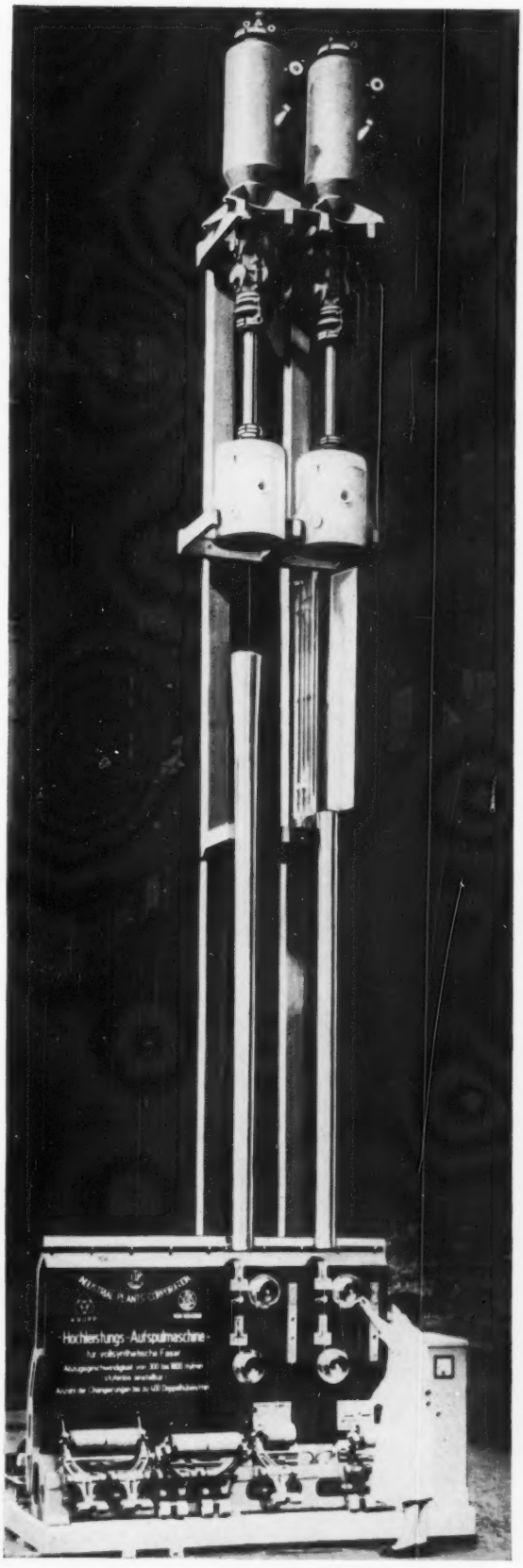

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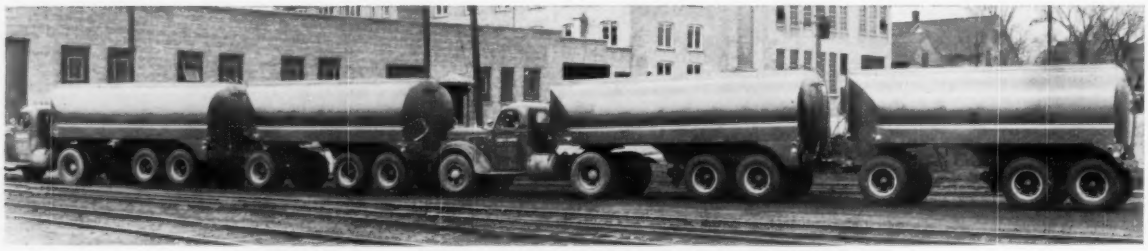

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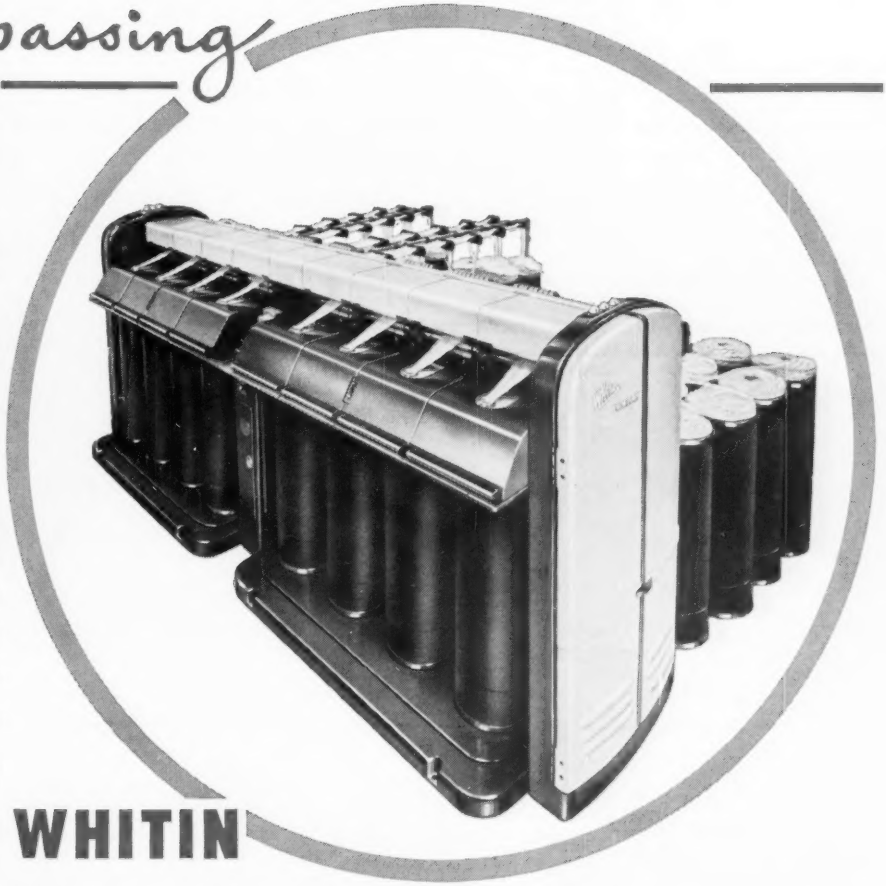

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Seldom has any new textile machine had so pronounced an impact,—been so definitely successful — as the new Whitin Even-Draft Drawing Frame. In many large installations (up to 80 deliveries), mills report production doubled or tripled, sliver quality reaching levels formerly unattainable, and costs slashed to new lows. In short, all current standards for drawing have been completely surpassed by this new Whitin high production, precision-made textile machine.

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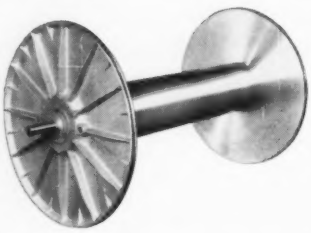
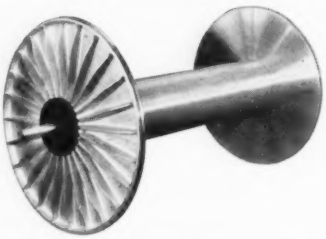
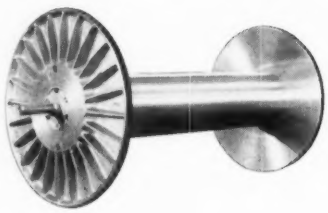


HAYES 38" x 54½" Aluminum Section Beam for cotton and spuns. Lightweight 207 lbs. Capacity, net weight of yarn 1,050 lbs.



HAYES 36" x 54½" Heavy Duty Aluminum Section Beam for acetate, spuns, and cotton. Can be adapted to all standard warpers.



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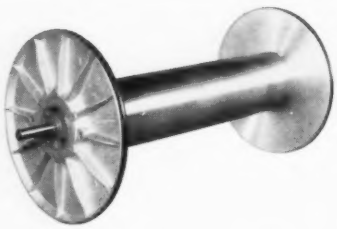
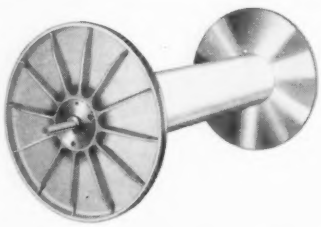
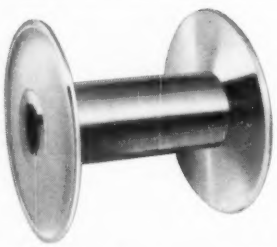


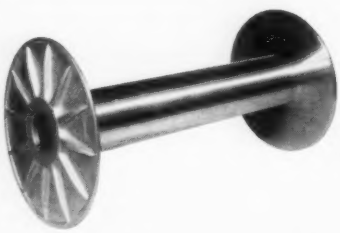
HAYES Bolted Type Section Beam for acetate. 30" x 54¼". 11¾" diameter barrel. Can be adapted to all standard warpers.



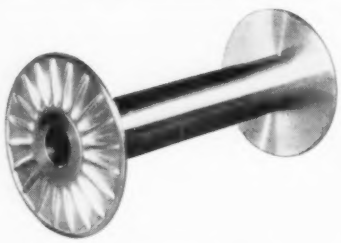
HAYES Aluminum Section Beam for acetate. Screwed type. Head sizes 26", 28", 30", 32". 54¼" traverse. 11¾" diameter barrel. Can be adapted to all standard warpers.



HAYES 21" Aluminum TRICOT Beam for nylon. Barrel size 7¾" diameter. Head thickness 1". Furnished in ⅜" and ½" wall. Bored for 4½" shaft. Keyways 9/16".



HAYES 21" Aluminum TRICOT Beam for acetate. Barrel 7⅜". Head thickness 1". Any desired traverse. Bored for 4½" shaft. Keyways 9/16".

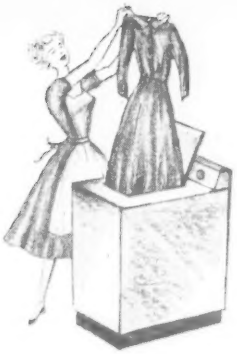


HAYES 21" Heavy Duty Forged Head Aluminum TRICOT Beam for nylon. Head thickness 1¼". Barrel 7¾". ½" wall. 39-7/16" traverse. Bored for 4½" shaft. Keyways 9/16".

HAYES 13¾" diameter Aluminum TRICOT Beam for acetate. Barrel size 4.925" diameter. Made in head thicknesses of 39/64" and 1". Traverse dimensions to suit. Bored for 2¾" shaft. Keyways 9/16".

HAYES manufactures a variety of Aluminum Loom Beams to fit Draper, and Crompton & Knowles looms, for acetates, spuns, and nylon. These can be manufactured with fixed or adjustable heads in sizes from 22" to 32" diameters.

these finishes achieve the finest in wash and wear fabrics



RESIPON® N C

— a modified urea-formaldehyde resin produces a soft, resilient hand on cotton and rayon fabrics, while adding these important "wash and wear" characteristics:

1 — exceptional crease and wrinkle resistance
2 — positive shrinkage control (at lower concentrations than conventional urea-formaldehyde resins)
3 — minimum amount of ironing required
4 — desirable hand for dress fabrics

HYDRO-PRUF®

— when used in conjunction with Resipon N C, the combination of silicone and resin brings wash and wear fabrics to new heights of quality and efficiency. Addition of Hydro-Pruf further improves your fabrics in these ways:

— by enriching the "hand" still further
— by speeding up the drying process (less water absorption)
— by increasing resistance to soil (fabric stays fresher longer)
— by improving tear strength

Finishers find that the compatibility of Hydro-Pruf and Resipon N C simplifies the production of the finest in "wash and wear", resembling the hand and appearance of combed cotton fabrics.

Ask your Arkansas representative for full details, or write for Technical Service Bulletin.

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ARKANSAS CO., INC.

Serving the Textile Industry for over 50 Years
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the facts about

VEREL

the new

Eastman

modified acrylic fiber

What the textile industry wants today are fibers that fit the job. And Verel is a specialist. It has its own set of properties, many of which can be heightened or controlled to fit specific needs. Look over this check-list and see how Verel can meet your special requirements.

( ) **Unusually kind, soft hand** which makes possible fabrics with a new degree of luxury and comfort.

( ) **Ease of processing and dyeing.** Verel can be processed on conventional textile equipment without difficulty. It can be dyed in raw stock, skein or piece goods with available dye-stuffs on regular equipment. In fact, with pre-metallized dyes you get light-fastness superior to that obtained with any other acrylic-type fiber, using any form of dye, regardless of cost.

( ) **Controlled heat shrinkage** which enables you to get almost any degree of bulk, density and resilience you want. Both stabilized and unstabilized forms of Verel are available.

( ) **High moisture regain** contributes to freedom from static in mill processing and gives greater wearing comfort. Actually Verel has a moisture regain double that of any acrylic fiber today.

( ) **Outstanding whiteness** which ordinarily makes bleaching unnecessary.

( ) **Excellent resistance to chemicals** covering a wide range of acids and alkalis.

( ) **Good fire-resistance** which permits manufacture of drapery, pile-type, and napped fabrics free of flammability hazards.

( ) **Good press and shape retention.**

( ) **Good wrinkle recovery.**

( ) **Low pilling tendency.**

( ) **Other important advantages.** Verel has a high tensile strength, excellent stretch or elongation and good abrasion resistance. It is immune to moths and mildew...weather-resistant and non-allergenic.

First appraisals of Verel show that it has an important future in such varied fields as men's and women's apparel, knitwear, socks, pile-type fabrics, home furnishings and industrial fabrics.

Its special properties make Verel particularly useful in blends with cotton, wool and other fibers. Right now mills and manufacturers are experimenting with Verel staple, available in 2, 3, 5 and 8 deniers per filament, at $1.10 a pound delivered east of the Mississippi River. If you'd like to work with Verel, too, get in touch with the Eastman sales department. Write or phone your nearest Eastman Sales Office.

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This new type thermosetting resin has been commercially proven in "wash-and-wear" finishes. Allow us to arrange a plant demonstration for you.

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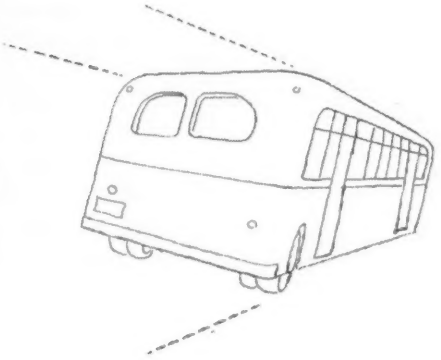
BEMBERG NOVELTY YARNS
... *with* CUPIONI† *leading the way* ...
ARE SWEEPING THE COUNTRY!

Trade excitement reigns at fever pitch . . . among converters, garment manufacturers, and retail store buyers...whenever fabrics made of Bemberg novelty yarns are shown!

Mills report that these fabrics have smashed all sales records in an otherwise disappointing selling season! And the sales trend continues to go up and up.

Opportunities for further exploitation of Bemberg novelty yarns eagerly await fabric creators with ideas. Investigate Nublite†, Strata Slub, Spun Plied Flake, Dream Slub, and the many other yarns, as well as Cupioni.

Investigate, too, the fashion possibilities of Bemberg with regular filaments in combination with other fibers, natural and man-made. Judging by sales performance to date, the rewards are king size!



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*rayon
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At every step of manufacturing, these precision travelers are constantly tested to assure maximum spindle speeds, smoother spinning, and more pounds per cone. To increase your production, and cut your costs, insist on Carter Travelers!

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Manufacturers of The Boyce Weavers Knotter

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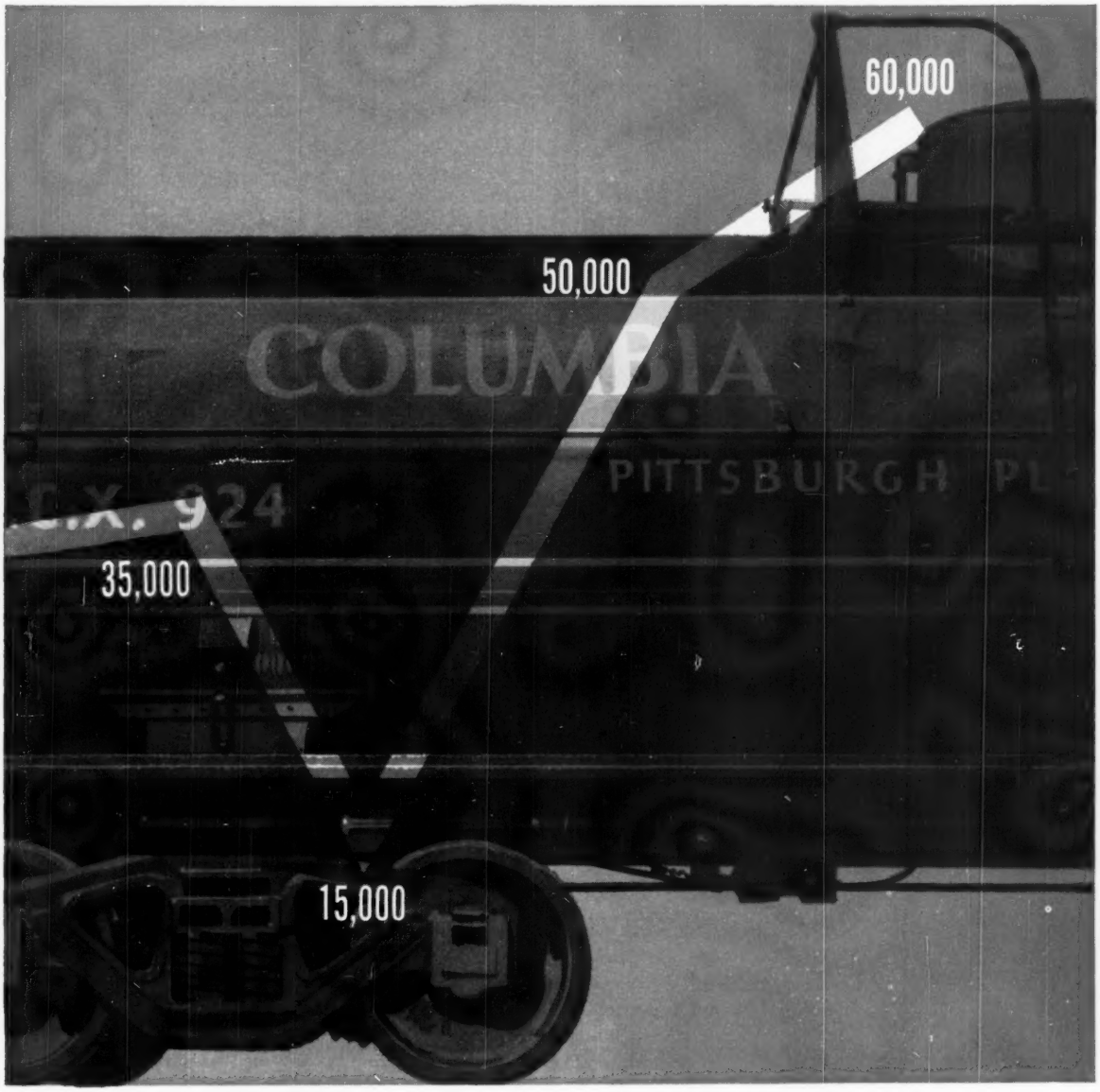

How many tank cars of liquid chlorine would you say were produced last year?

Total production of liquid chlorine by America's chemical industry in 1955 was an estimated 3,407,935 tons.

This represents an increase of 38% since 1950 and an increase of 65% since 1945.

Based on 55 ton capacity cars, last year's chlorine production was enough to fill a string of 61,962 tank cars.

Chlorine continues to grow. This year, Columbia-Southern remains the leading merchant producer of chlorine.

Columbia-Southern's sales, traffic, and technical departments are always ready and pleased to assist you with your chlorine problems.

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IT'S NEW A HIGH PRODUCTION TOOL FOR THE MILL SEEKING BETTER CLOTH AT LOWER COST...

POSITROL* SLASHER
by SACO-LOWELL

ADAPTABLE FOR COARSE, MEDIUM AND FINE YARNS SPUN FROM COTTON, SYNTHETIC, NATURAL FIBRE AND BLENDS.

The new Saco-Lowell Positrol* Slasher is a universal tool for the sizing of warps. It has produced exceptional results on all types of yarn. Key to the slasher's ability to process all types of yarn is the Saco-Lowell Drying Unit. This unit is strong in structure, reasonable in dimensions and thoroughly insulated. There is minimum amount of warp yardage in dryer at one time. Larger quantities of guided air are handled in the most efficient manner from the standpoint of power and heat conservation.

The combination of a new drying unit with the Positrol* Slasher's new automatic magazine creel, improved size box, and new No. 45 head end result in a worthwhile increase in production per slasher and per man-hour, plus improvement in the overall quality of slashing.

A Saco-Lowell Engineer will be glad to give you complete information and prepare a "Forecast for Savings" based on a Positrol* Slasher installation — another step in your Saco-Lowellizing program.

SACO-LOWELL'S POSITROL* SLASHER

Its capabilities include slashing:

1. Warps containing 8000 ends of No. 90/1 combed cotton.
2. Warps of acetate filament, low-twist 75-denier acetate.

A new catalog is just off the press — send for your copy.

*Reg. Trademark.

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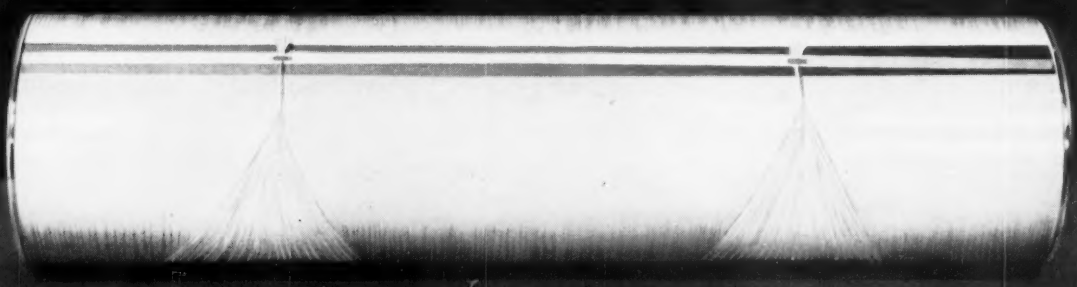
SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

New Celanese 21″ x 84″ Beams offer definite advantage to tricot knitting trade



New 84″ beams are now being offered to the trade, after trial shipments of knitting sets which indicated simplified handling, improved quality, increased production.

FEWER BEAMS PER SET: The bigger size reduces the number of section beams required to make up a set. This means simpler handling from the very start.

EASIER LOADING AND THREADING UP: New 84″ beam cuts time and effort required to load and thread up machines. It simplifies setting up, starts production faster.

IMPROVED QUALITY: Gained because flanges are reduced by respectively eight and sixteen when compared with 42″ and 21″ beams. Flange reduction lessens the possibility of causes for defective fabric as high or low edges causing streaks; broken filaments and ringers due to flanges or edge ends (these in turn cause drag marks); high and low cover bands from varying beam circumferences, tapered beams or high or low edges.

INCREASED PRODUCTION: The 21″ flange doubles knitting production time as compared to 14″ flanges. This in turn reduces the time for creeling in the same ratio.

For further information, write
Celanese Corporation of America,
Textile Division, Charlotte, North Carolina.

Celanese®

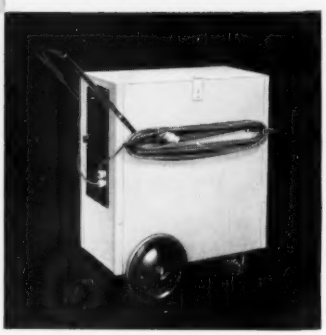
Celanese Fibers For Industry

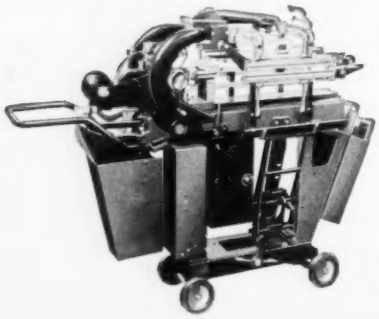
BARBER-COLMAN

SERIES "M" MODELS NOW MADE IN **10** SIZES
FROM 36" TO 126" BY 10" VARIATIONS

PORTABLE *Warp-Tying Machines* FOR ALL PURPOSES

The BARBER-COLMAN line of warp-tying machines has now been extended to cover practically every conceivable application. As noted above, the Type "M" machines are now available in *ten* sizes. These machines tie the *full width* of the warp in one operation, work directly in back of the loom, and are made in several types to tie-in cotton, spun yarns, filaments, wool, worsteds, or synthetic yarns from a flat sheet or from an end-and-end lease. When using a Type "M" Warp-Tying Machine, none of the weaving elements need be removed nor any of the loom settings disturbed. The picture at the right shows the special cart used for protecting the Knotter Unit when not in use and for carrying it from one frame to another when two or more are employed. This carrier also contains the variable speed-controller for the Knotter Unit. These machines are probably the most versatile available for most mill conditions.





IMPROVED SERIES "L" MODELS IDEAL FOR CERTAIN CONDITIONS

BARBER-COLMAN Model "L" machines are familiar to two generations or more of mill people, because they have been on the scene in one form or another for 45 years. The latest designs, one of which is shown here, have many up-to-date improvements which distinguish not only their appearance but also their operation and efficiency. These compact, versatile, and easily-moved machines have many important applications in both large and small mills. Barber-Colman representatives are thoroughly versed in the usefulness and applicability of both Model "L" and Model "M" machines, and can be consulted with confidence as to which might suit a given situation best. Also, it is important to know that all users of Barber-Colman machines are served promptly and skilfully by an alert service group of wide experience.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

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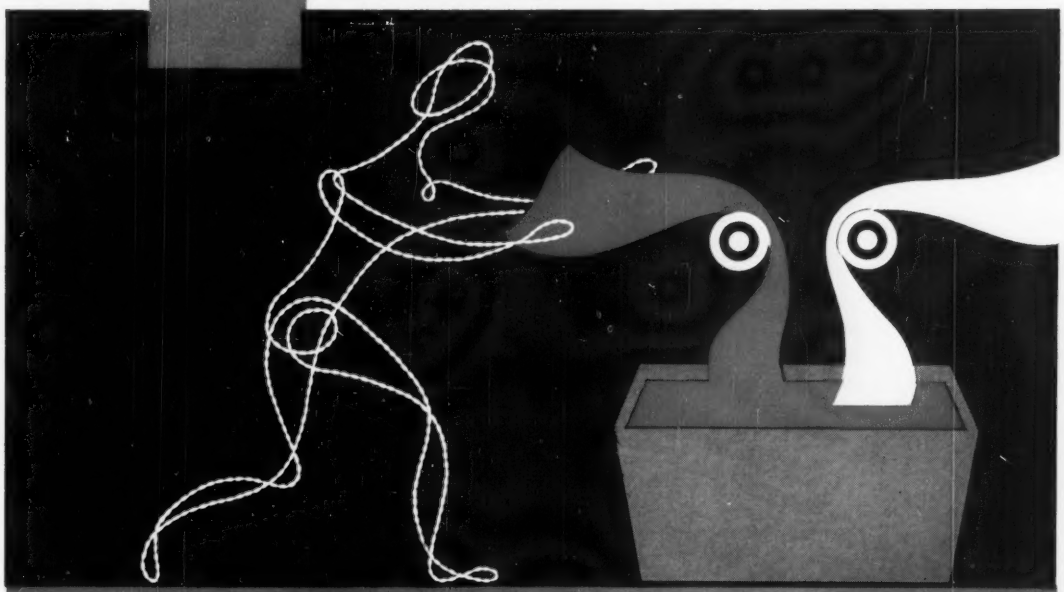
be wise about dyes!

Q. How do you fill dyeing requirements without filling bands?



A. Count on Continuous Process Rayon to be 100% uniform... dye 100% uniform!

Inch by inch, mile after mile, Continuous Process Rayon is so totally uniform that every inch dyes exactly the same as every other inch!

Because of its unique process, IRC Continuous Process yarn is so free of knots and breaks that weavers of critical fabrics insist on it.

Manufacturers of backing for automobile slip covers, for example —a highly critical fabric—find that IRC yarn cuts down drastically on seconds... fabric dyes evenly, streak-free, perfect. One manufacturer of iridescent taffeta reports that, since specifying IRC yarns, he has sold millions of yards of fabric virtually without returns.

Since IRC is your first choice for critical fabrics—at no greater cost than other yarns—isn't it sound business to specify IRC for *all* your rayon needs?

I·R·C

INDUSTRIAL RAYON CORPORATION
CLEVELAND, OHIO

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Sales Offices: 500 Fifth Avenue, New York 36, N. Y.
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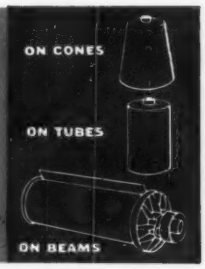

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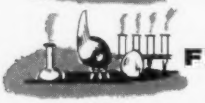

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Manufacturing better products from corn for 75 years.

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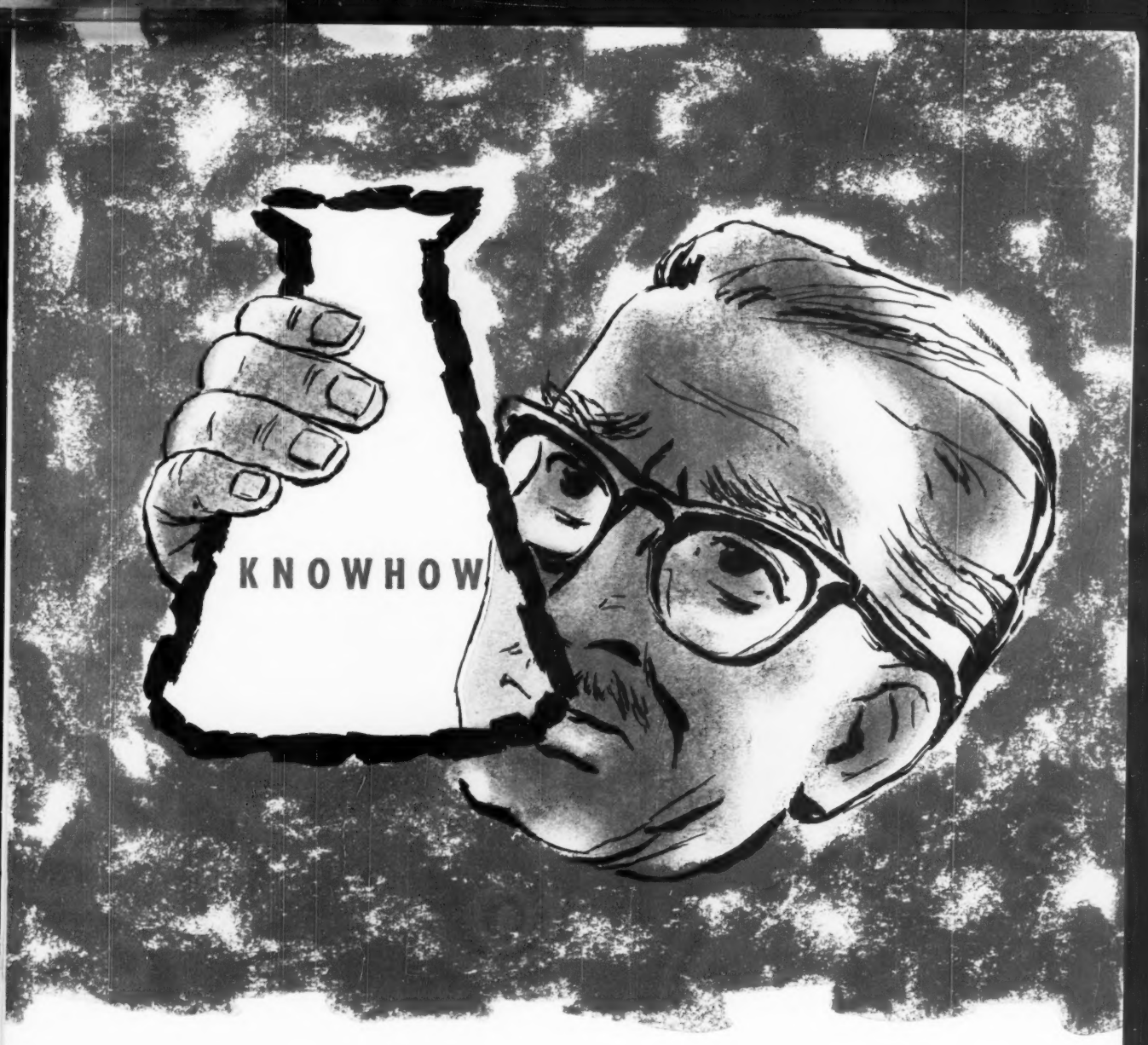

Knowhow is the extra, unseen ingredient that often makes the difference between dyes with lasting color beauty and fugitive dyes that infuriate customers and ruin profits.

That's why leading textile manufacturers DEPEND on

ALTHOUSE DYES PLUS
ALTHOUSE SPECIAL DYEING TECHNIQUES

to make sure of fabrics with the Enduring Color Beauty that's essential to keep customers happy, profits up.

For three generations Althouse special KNOWHOW has been achieving higher and higher standards of color fastness. When you are dyeing cottons, rayons and most blends, it will pay you to get the benefit of Althouse special dyeing techniques by specifying these exclusive Althouse dye specialties:

Superlitefasts	Nylanthrenes	Azoanthrenes
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Althouse research teams welcome your tough problems — help you work out special dyeing techniques that give your customers the extra color values that make profits zoom.

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Your key to lasting color beauty

ALTHOUSE CHEMICAL COMPANY, • READING, PA.
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How will tomorrow shape up?

Today's market is a challenge.

All signs point to the opportunity for increasing apparel sales. To insure full realization of this opportunity, you must sell apparel that meets the growing requirements of today's more discerning customers.

They're still asking for beauty in apparel . . . but now it's beauty plus! They're asking for serviceability and easy-care extras that are built right in. And that means a greater acceptance for fabrics created especially for today's living . . . fabrics made with Du Pont modern-living fibers.

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NYLON ORLON* DACRON RAYON ACETATE**

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*"Orlon" is Du Pont's registered trademark for its acrylic fiber. **"Dacron" is Du Pont's registered trademark for its polyester fiber.

MODERN
TEXTILES MAGAZINE

July, 1956
Volume 37, Number 7

Publisher's Viewpoint

Time for Concrete Proposals

The increasingly energetic efforts by American fabric manufacurers to obtain protection against Japanese imports are making some headway. As a result of the closely reasoned arguments put forth in recent months by textile spokesmen, legislators in Washington, the business and financial community, and organized labor in the textile industry has been stirred. Last, but most important of all, the great American public outside the textile industry has grown more aware that prosperity of a large segment of our population is being endangered by low-wage fabrics and apparel from Japan.

Our textile industry is not opposed to a vigorous trade between the United States and other countries of the free world. Textile people recognize that this country must be willing to buy goods from its friends and allies if it wishes to sell goods to them and keep them strong and resistant to the poison of Communism.

All our industry asks is that it be given protection that will be sufficient to enable it to compete on equal terms with foreign textile products. And since such goods are produced at wage levels far below the high minimum wages prevailing here in the United States, higher tariffs or quotas, whichever on study seems most practicable, are necessary to remove the disadvantages which our domestic industry faces when it must sell its goods in competition with low-wage goods made in Japan.

For example, as pointed out recently by the Northern Textile Association, Japanese ginghams are selling in New York, duty paid, at 33¼ cents per yard. It costs American mills 37½ cents per yard to make the same fabric. Japanese broadcloth sells in New York, duty paid, at 26 cents per yard—four cents under production costs in many American mills.

These are the facts of the Japanese import danger today. With the American textile industry making progress in arousing the sympathy of the nation to the danger of such imports, the time has come to push forward for effective legislation to remove this threat.

Our industry must unite in presenting to Congress an explicit request for adequate tariffs or for quotas that will effectively limit Japanese imports of textile products to a quantity that will not harm, now or in the future, the prosperity and normal growth of America's vital textile industry. To request of Congress any less protection would be a waste of the vast amounts of energy and money our industry has already expended to arouse the nation to the danger of low-wage textile goods from Japan. Let us act soon, and let us act with determination.

A. J. McCullough

PUBLISHER

OUTLOOK IN TEXTILE MARKETING

By ROBERT C. SHOOK, Textile Economist

Sales Potential in New Ideas

One of the unseen and uncounted factors in the man-made section of the textile industry is the enormous capital investment in new ideas.

Not just in new fibers, but in new fabric ideas. New ideas which have not yet hatched out, seen the light of day, or transformed themselves into actual, profit-making sales. New ideas in fabric construction and styling which consumers are hungry for, and are able and willing to pay for.

There is no way to make an unqualified estimate of the amount of money which is now lying dormant in fabrics of this type. This investment in fabric development has been made by mills, larger converters and fiber producers.

Dormant Power in New Ideas—There is not much doubt, however, that investments of this sort, in the last 2 or 3 years alone, total at least $10,000,000, and may easily exceed $15,000,000. Whatever the exact amount, there is no doubt that it is substantial. And there is no doubt that the mere existence of this investment has important implication for textile distribution. Certain conclusions, which, if correct, have fundamental importance, can be drawn:

1) *Why are these investments in new fabrics lying dormant, when textile sales generally are so poor, and new ideas so badly needed?*

This question goes to the heart of one of the most serious problems the textile industry faces—the slowness with which new ideas are accepted. For, despite all talk about the importance of styling, and the textile industry as a fashion industry, the fact remains that the cutter and the retailer, with few exceptions, are frightened to death of anything new. Everyone wants something new, but nobody wants to have it first.

Courage to Try New Things Needed—The consequence of this timidity is that new fabric ideas encounter a roadblock of cutter and retailer indifferences. It is a safe bet that any fabric which begins to catch on today has been there, ready and available for the market, for at least the last two years.

2) *How can the interval between development and market acceptance be shortened, and the distribution of new fabric ideas speeded up?*

One of the great contributions made by the independent converter has been his ability to put over new ideas. His intimate contact with cutters, and his closeness to the retail level, give him a position of influence and superior market anticipation. If anyone can persuade the cutter he actually wants something new when he talks about the need for new fabrics, it is the converter.

The converter performs many other functions—styling, development, service, risk-taking, etc. But one of the most important functions, particularly in terms of today's technology, is putting new ideas over, and getting good new fabrics into circulation with the least delay.

3) *What does this situation imply for textile distribution?*

It implies that, in this respect at least, there is a greater opportunity than ever before for the synthetics converter. There is an enormous backlog of new ideas waiting to be put over.

Action on New Ideas Necessary— The substantial investment in these new ideas, by both mills and fiber producers, has also focused their attention on the difficulty and importance of actually getting new ideas into circulation. Even mills which conduct an integrated operation recognize the importance of this problem, and of the independent converter. The same thing is true of the fiber producer, many of whom have initiated new merchandising programs, most of which have special features intended to help the independent converter, and to strengthen his position.

(Continued on page 57)

Harry Doniger

Paced by hard-driving bosses, Harry and Bill Doniger, McGregor-Doniger last year paid out $17 million for fabrics, fashioned them into apparel that sold for an impressive $47 million

Textiles needs more like them

By Jerome Campbell

Editor, MODERN TEXTILES MAGAZINE

PROBABLY no other industry has more conventions, meetings, forums, seminars and panel discussions than textiles. And it is a rare textile gathering where some speaker does not rear up on his hind legs and declare roundly that what this industry needs is more colorful and varied styling for menswear backed by speedier obsolescence of men's clothing. Invariably the speaker draws fervent applause when he adds that the textile industry by its neglect of menswear styling is losing out on a major opportunity to gain bigger sales.

In view of this intense feeling among textile people that sales of menswear should be increased, the entire industry from fiber producers (natural and man-made) right down to retailers and not forgetting millmen, converters and garment manufacturers, should regard with heartfelt appreciation the achievements of the Doniger brothers, Harry and Bill.

For while others talk, these two Vesuvii of merchandising energy have acted and succeeded. What else but awe and admiration can the textile industry feel for the Donigers and their company recently rebaptized McGregor-Doniger, Inc.? A look at the figures shows that last year this supercharged operation bought some 34 million yards of cloth for a total outlay of more than $17,000,000, and sold literally unnumbered items of men's sports and leisure wear for an impressive total of $47,408,000.

Or take another fact. The biggest seller of the Doniger line, the McGregor Drizzler jacket, is cut from a twill cloth which combines a high tenacity rayon warp with a combed cotton filling. Since the jacket was introduced in 1947, McGregor has sold more than five million and currently keeps two factories busy turning out 14,000 of them every week.

A deep involvement in new products and new fashions is the dominant climate of McGregor-Doniger which specializes in sports and leisure wear for men—actually the only place where these twin concepts have any real scope in men's clothing. Nowadays the idea is widely accepted that men's leisure garments can be varied, richly splashed with color and made to move rapidly because of constant new improvements which stimulate consumer willingness to buy.

Until recently this idea of constant newness in menswear was tremendously disturbing. Its gradual acceptance is a sign of how the menswear industry and men themselves—those conservative old fuddy-duddies when fashion is concerned—have been re-educated in the last few years. In awarding credit for bringing the excitement of a continuous flow of new garments and new fashions to men's leisure wear,

(Continued on page 52)

FABRICS, FABRICS AND MORE FABRICS—In a setting symbolic of McGregor's gargantuan consumption of piece goods—34 million yards last year exclusive of linings and trimmings—vice president Melvyn R. Liggett poses for his picture. In charge of manufacturing, he supervises operations of the company's 13 factories and 3,000 workers.

The future of tire cord

RAYON or NYLON?

Rayon displaced cotton in the big and lucrative tire cord market. Now nylon has gained a foothold. Will history repeat itself? Here is an objective analysis of the complex factors influencing the outcome of this deepening struggle

By Robert C. Shook*

PRICE REDUCTIONS for nylon tire yarn this past spring introduced a new and third stage of competition in this market. This followed a first stage during which the technical qualifications of nylon were being tested and evaluated; and a second stage during which advertising and promotional campaigns were stepped up in order to increase distribution of nylon in the tire field.

Modern textile technology has produced fibers which not only meet special needs, but tend generally to have a longer wear life. The development of new end-uses becomes constantly more important. In the tire market, the use of wire cord breakers, one of the techniques developed to restrain nylon tire growth before present hot stretching techniques were perfected, tends to reduce fiber consumption. Moreover, other fibers, some of which have still greater tensile strength, are already candidates for later use in various types of automobile and truck tires.

Importance of Tire Market

Almost 475 million pounds of tire cord and fabric were consumed in 1955, and slightly more than 50 million pounds of chafer fabric.

The *potential* importance of this market is even more impressive. R. S. Wilson, vice-president in charge of sales of Goodyear Tire and Rubber Co., estimated last December that 20 years hence there will be some 84 million cars and 18 million trucks on American highways. This estimate may seem high, in comparison with the 51 million cars and 10 million trucks registered in 1954. Even if allowance is made for the natural optimism of a sales executive, however, the most conservative estimate of future car and truck registrations reaches an impressively high figure. No one doubts that our existing roads will be rebuilt and improved; that new roads will be constructed; and that a steadily increasing amount of the nation's automobile and truck traffic will be moving at high speeds on gigantic interstate highway systems.

In any case, it is quite plain that any fiber which can dominate this market has an assured consumption of many millon pounds annually, and has associated itself with a market in which growth factors are strongly favorable.

* Vice President and Director of Research, A. W. Zelomek Associates, Inc. This article is based on a special report prepared for members of Textile Distribution Group.

From the first automobile until the second World War, almost all automobile and truck tires were made of cotton cord or tire fabric. Only 9 million pounds of rayon cord and fabric were used in 1939, and it was not until 1943 that rayon cord and tire fabric consumption reached 46 million pounds, which was slightly below the level achieved by nylon cord and tire fabric in 1955.

Nylon's First Appearance

Between 1943 and 1951 consumption of both cotton and rayon tire cord and fabric showed further increases, reaching 224 million pounds for cotton and 311 million pounds for rayon in 1951. In that year some 4 million pounds of nylon cord and fabric are reported. Volume of tire cord consumption is shown in the following table, and the changing relative importance of cotton, rayon and nylon in the accompanying chart.

In the next 2 years great changes took place. By 1953:

1. Consumption of cotton tire cord and fabric had declined to the nominal level of 16 million pounds. Cotton had lost this market, never to regain it as far as can be seen now.
2. Consumption of rayon cord and fabric reached an all-time high of 429 million pounds. Whether this level of 1953 will be reached again in the near future, or in fact ever, is a source of great present concern to all producers of high tenacity rayon yarn.
3. Consumption of nylon cord and fabric had expanded almost 5-fold from the 1951 level, reaching 19 million pounds. Nylon had been under test for tire casing almost since the first day of its commercial distribution. Hence the fact that consumption had reached only 19 million pounds in 1953 may seem disappointing. Other factors, however, must also be considered. To what extent had technical problems of nylon tire construction been solved? How rapidly could nylon tire cord consumption be expected to continue expanding? To what extent should merchandising policy be modified? In all these respects, 1953 was a critical year.

Stages of Nylon Penetration

The first stage of nylon penetration in the tire cord market was hardly noticeable in the statistics of shipments. It included only small lots of cord and fabric, for testing and experimental purposes. That nylon

PRODUCTION OF TIRE CORD AND FABRIC
(Millions of pounds)

Year	Cotton Chafer	Cotton Cord & Fabric	Rayon Cord and Fabric	Nylon Cord and Fabric	Total Cord and Fabric*
1937	18	243			243
1939	17	243	9		252
1941	30	210	18		238
1942	33	190	25		215
1943	36	203	46		249
1944	45	220	102		322
1945	53	224	189		413
1946	74	237	213		450
1947	66	285	214		499
1948	63	222	251		473
1949	42	114	279		393
1950	57	165	295		460
1951	65	224	311	4	539
1952	48	92	384	8	484
1953	57	16	429	19	464
1954	47	13	324	30	367
1955	51	16	406	50	472

* Excludes chafer fabric

Note: Tire cord is obtained by twisting and plying tire yarn. Tire fabric is made with just enough picks to hold the cord in fabric form. Chafer fabric is used at the base of the tire, to prevent chafing against the rim. An increasing amount of rayon is being used in chafer fabric, and nylon is being tested. Chafer fabrics are also used for coating and enameling. Of the 51 million pounds of chafer fabric reported in 1955, probably 35 to 40 million were used in tires.

was a promising fiber for this end-use was not denied. Despite its high tensile strength and properties of elongation, however, the problems of constructing a satisfactory tire on an economical basis were substantial. A long period of testing and experimentation began in this market, almost from the first day nylon achieved existence as a fiber.

To mark an end to this first stage of penetration is rather difficult since there are still technical problems of nylon tire construction which must be solved. Rather arbitrarily, however, 1953 can be taken as the critical year after which came the second stage of tire market penetration.

The second stage of nylon penetration was characterized by an expanded promotional and advertising program by nylon producers. There was a price reduction in 1954, but the expansion in advertising was probably more significant in stimulating consumption.

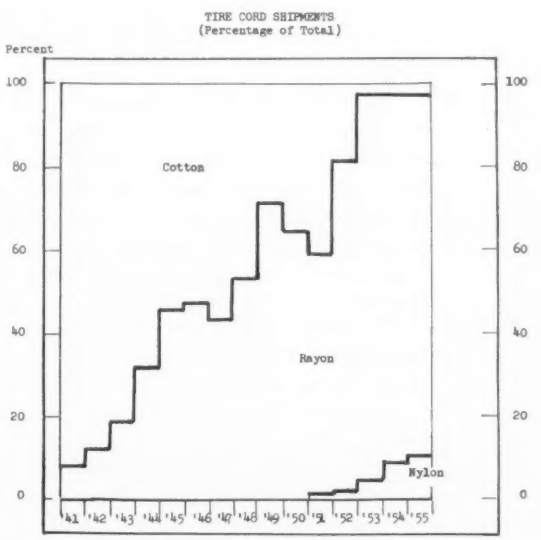
Shipments of nylon to important consumer markets such as tricot, women's hosiery, and for use in some woven fabrics, began to decline sharply in 1953. Meanwhile plans for the expansion of nylon productive capacity were well formulated, and substantially increased poundages were scheduled to become available within the next year or two. If new capacity was to be used as it came into existence, if in fact the then existing capacity was to be fully occupied, a further expansion of nylon consumption in some important market like tire cord was essential.

The distinguishing characteristic of this second stage of penetration, therefore, was the extent to which promotion and advertising were used as means to expand nylon tire cord consumption. Shipments of nylon increased sharply, reaching a peak rate of 52 million pounds annually in the second quarter of 1955. *There is no way of measuring exactly how much of this expansion would have occurred in any case, but various estimates of that part of the increase due to advertising and promotion range between 5 and 15 million pounds.*

It is probably safe to say that somewhat less nylon would have been consumed by tire producers in 1955, if it had not been for the intensity of the advertising and promotional campaign. It is certainly safe to say, however, that consumption would not have

(Continued on page 65)

Chart 1



REPORT FROM EUROPE

Labeling Problems Worry Europeans

By Special Correspondent

PARIS—World Textile Meeting Upcoming—Quality and labeling will be the twin themes of world textile meeting sponsored early next Fall by the International Rayon and Synthetic Fibers Committee. The dynamic, 16-member IRSFC, based here in Paris, feels that the best way to make friends is to circulate. Consequently, the world labeling meeting will take place at Chalmer's University, Gothenburg, Sweden, Oct. 1-3.

IRSFC spokesmen here note that increased blending of natural and man-made fibers is complicating the labeling-quality problem; that consumers are becoming a bit perplexed with it all, and that some kind of straightening out is in order if the entire man-made textile industry is to progress.

Russians at English Textile Meeting—While IRSFC meetings don't emphasize the "other" side of the Iron Curtain, another meeting, held a couple of weeks ago in Southport, England, is being called a success even though (or, possibly, because of) the presence of textile experts from that other half of the world. Europe's textile men are reflecting on the May meeting at which the U. S. A. was present—as well as the Russians, Poles and Czechs.

About 100 delegates from 14 countries met to talk about international textile standards. Sponsored by the International Organization for Standardization, ISO's Textile Committee delved into textile testing methods and came up with some measure of agreement on waterproofing cloths, strength testing, moisture weighing and cloth measurements. Work was also begun on dovetailing national standards and will, presumably, go on.

East European Fiber Gains—And while the political "detente," as the French call it, between East and West goes on, textile men here report advances from East Germany and progress in the U.S.S.R. East German scientists appear to have developed a wool-type truly man-made fiber, which they call "Lanon." Still in the research stage, commercial exploitation is said to be a few years off. The fiber is understood to have insulating properties which, of course, could make is valuable in the booming industrial fabrics market.

Russians Strive for Big Volume—As for the Russians, their aim is sighted on output, pure and simple—with few frills for the discriminating customers. Output of rayon and nylon-types together will go up about fivefold by 1960—to some 330,000 metric tons. The true man-made portion of 1955's combined production was insignificant but will, the Russians say, jump to 44,000 tons by 1960.

British Push Nylon Apparel—But back on this side of the political border—and over in England—we find man-mades being worked into an increasingly varied pattern of consumer goods. Manchester was the scene a few weeks ago of the British Nylon Spinners' exhibit at an Outerwear Manufacturers' show. The British ingeniously used 100 per cent nylon in seersuckers and herringbone twills; also in 6-ounce cotton blends; nylon fabrics waterproofed with synthetic rubber, and in plain overalls. And at an Earl's Court show in London, nylon tarpaulins—with a weight of 14 ounces per square yard—were demonstrated. The British see a great future for all-nylon "tarps."

The Swiss Industries Fair, which was rather light this Spring on new fabrics, was heavy on new machinery. To single out what was, perhaps, the most interesting aspect, visitors were talking about the variety of electronic controls being used on narrow and broad loom weaving machines. Such well known Swiss manufacturers as Sulzer, Sauer, Ruti, Benninger and Muller were all represented in the control field.

And, with the vacation season hard upon us, it seems well to conclude on a summery note: Dobeckmun Ltd., England, have begun using their "Lurex," non-tarnishable, aluminum thread to make rainbow-colored lures and wet flies for the "Compleat (textile) Angler."

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Use this method of EVENNESS TESTING for better worsted yarns

By M. Romer*
INDUSTRIAL RAYON CORP.*

THE PURPOSE of this paper is to formulate the interpretation of data obtained in evenness testing of materials processed on the worsted system of spinning.

Since these methods were developed in a quality control laboratory of an operating worsted mill, the approach taken was geared mainly toward simplification and standardization of procedures and reports. The objective was to function in a quick, easy-to-interpret manner in order to allow for the most effective assistance in solving mill problems.

It should be understood that these methods are neither scientifically perfect nor substitutes for the old-fashioned mill know-how. They serve only as helping tools which, when used wisely in cooperative spirit with the mill's practical knowledge, will result in process and product improvements.

Basic Problem

The initial efforts centered around the establishment of proper testing procedures. Then, from systematic testing and evaluations, quality level standards were drawn. These two tools were used in trouble-shooting and finally in establishing routine in-process quality control testing.

This presentation will follow the same outline, that is:

a. Testing Methods
b. Levels of Quality
c. Trouble Shooting
d. Quality Control

Testing Methods

Martindale's theory[4, 5] stated that the average number of fibers per cross-section of a fiber assembly varies in accordance with the Poisson Law of Distribution. The following relationships were established:

$$N = \frac{\text{Denier Yarn}}{\text{Denier Fiber}} = \frac{854000}{W \times d^2}$$

$$V_N = \frac{100\%}{\sqrt{N}}$$

Where d = fiber diameter in microns
W = worsted count (560 yds/lb = 1's)
N = average number of fibers per cross-section
V_N = coeff. of variation of number of fibers per cross-section, normally expected from Poisson Law.

An index of irregularity "I" was introduced and defined as the ratio of *actual* irregularity to the *normal* expected irregularity of material.

$$I = \frac{V_{N\ actual}}{V_{N\ expected}}$$

Since the testing was performed using a Uster Linear Integrator which records values in terms of percent mean linear deviation rather than coefficient of variation, and since this % mean deviation is directly proportional to the coefficient of variation, it was possible to express "I" using the ratio:

$$I = \frac{D_{actual}}{D_{expected}}$$

Where I = index of irregularity
D = % mean linear deviation

By re-arranging the above expressions, the expected value of "D" could be calculated:

$$V_N = 1.25D$$

$$V_{N\ expected} = \frac{100}{\sqrt{N}} \quad \therefore \quad D_{expected} = \frac{80}{\sqrt{N}}$$

$$D_{exp.} = \sqrt{\frac{80}{\frac{854000}{W \times d^2}}} = 0.085d\sqrt{W}, \text{ therefore}$$

$$I = \frac{D_{act.}}{D_{exp.}} = \frac{D_{act.}\sqrt{N}}{80} = \frac{D_{act.}}{0.085d\sqrt{W}}$$

In actual practice, "I" values were calculated directly from a Uster nomograph[3]. Correct micron fiber fineness of the fiber and "D actual" had to be known to obtain the "I" value. A testing schedule was established as shown in Table 1.

TESTING SCHEDULE

Short Term Variation

ITEM	SLIVER	ROVING	YARN
Material—yds./min.	4	8	100
Chart—inch/min.	4	1	10
Scale	25%	50%	100%
Yds. material/inch chart	1	8	10
Sample size	one can—5 read./can	two bobbins—5 read./bob.	five bobb.—5 read./bob.
Reading taken every*	½ min. = 2 yds.	½ min. = 4 yds.	½ min. = 50 yds.
Total length tested	10 yds.	40 yds.	1250 yds.
Error of mean	±10%	±5%	±2%

* First reading is taken after 2½ min., next ½ min. later and so on. Reading obtained after first 2½ min. is discarded, and only next five readings included in the average.

Report
(1) I-value, calculated from Uster nomograph
(2) Error of mean, ± % error
(3) Limits of I, obtained from quality level chart
(4) H-factor, defined as ratio of $\frac{\text{I actual}}{\text{I expected}} \times 100$

Explanation of H-factor

114 dram/40 yds. sliver has an actual I = 4.9
Expected I-best = 4.0

$$H = \frac{4.9}{4.0} \times 100 = 122.5$$

20's yarn has an actual I = 1.4
Expected I-best = 1.1

$$H = \frac{1.4}{1.1} \times 100 = 127.3$$

Conclusion: Sliver is relatively more uniform than yarn.

Table I

* Formerly James Lees & Sons, Bridgeport, Pa.
Paper presented at the 6th annual conference of the American Society for Quality Control, Charlottesville, Va.

The H-factor introduced into the report served as an indicator of relative evenness in comparing between different weight materials.

Table 2 illustrates a daily report filled out.

Levels of Quality

The quality of materials tested were divided into three levels:

a. Even
b. Fair
c. Uneven

Chart I entitled "Index of Irregularity Standards" illustrates this graphically. The graph shows lines of expected irregularity values in terms of index "I" plotted versus worsted count. These standards are very similar to those shown by Hans Locher.[1]

It can be seen from these standards that a value of I = 1.1 is not expected until 16's count is reached. Values of "I" between 5 to 6 for the top are considered even. Since the two most commonly used materials were 3 denier nylon and 54's wool, a quality graph expressed in terms of "%D" plotted versus worsted count was made for quick reference. This is shown on Chart II. In actual practice this Chart II turned out to

(Continued on page 42)

JAMES LEES & SONS CO.

Physical Testing Lab.

UNIFORMITY ANALYSIS REPORT

Material: Nylon—3d — Date: 2/16/55

Lot or S. O.: 4570-1 Reg. Process — Date Rec'd: 2/14/55

SHORT TERM VARIATION

OFF PROCESS	Gill Red.	1st P. D.	Dual	Quad
Dram/40 yds. in Count	194	195	171	75
Avg. Microns	19	19	19	19
I	14.1	8.70	6.85	4.31
I error of mean	12.7-15.5	7.8-9.6	6.17-7.53	3.88-4.74
I limits	6.2-14.0	6.2-14.0	5.1-10.0	3.1-5.4
H	2.27	140	134	139

CHART DATA

Material-yds./min.	4	4	4	4
Scale	50	25	25	25
Yds. mat. in chart	1	1	1	1

Remarks

Distribution: Worsted Mill; Product Development; File — Signed

Table 2

Chart I

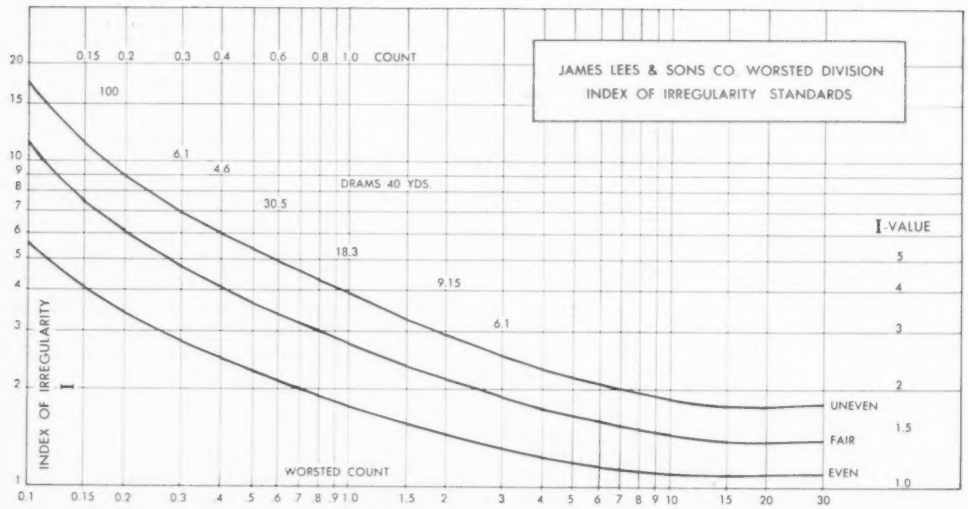
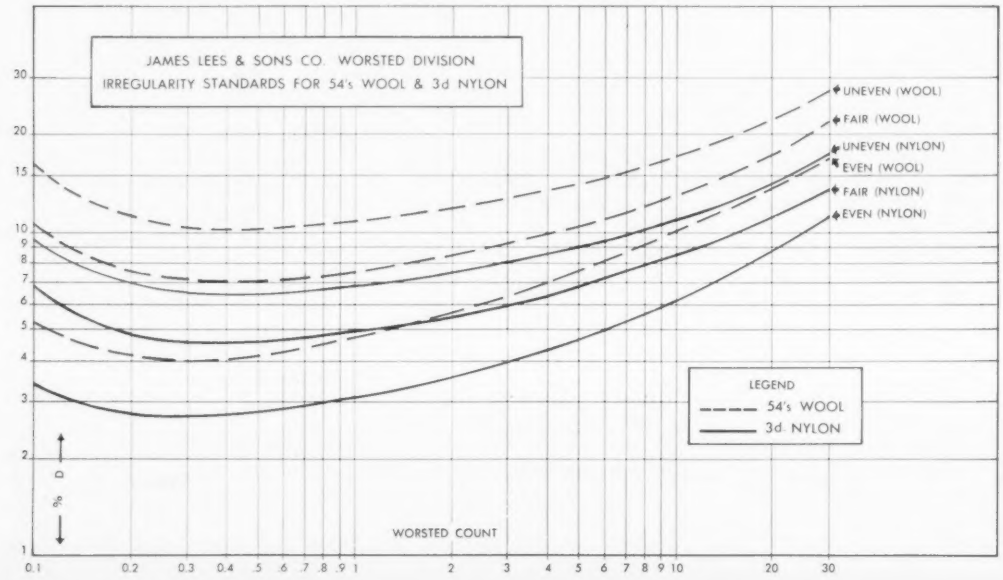


Chart II



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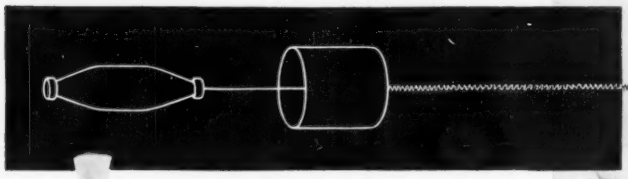

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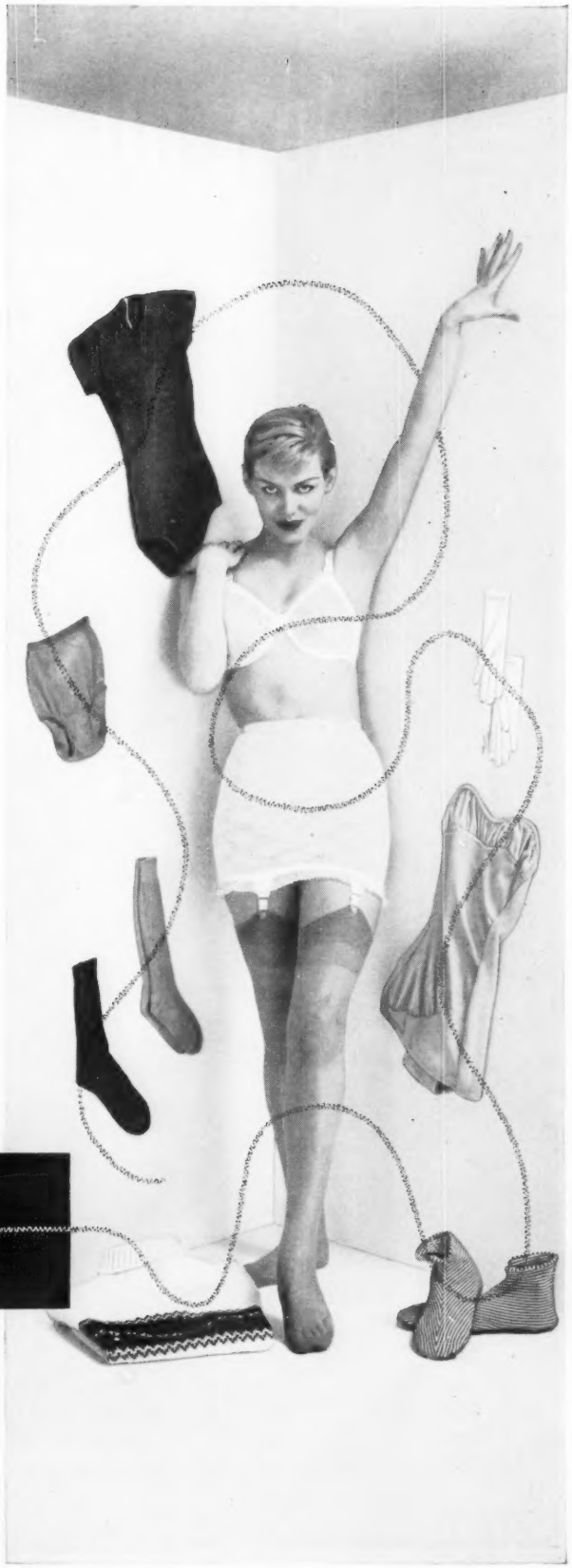

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Evenness Testing

(Continued from page 38)

be much less useful and effective than Chart I which was drawn in terms of "I" values. Conversion from Chart I to Chart II for any fiber fineness was easily accomplished using Uster Nomograph.[3] Once testing procedures and quality levels were drawn, the ground work for trouble-shooting and quality control was established.

Trouble-Shooting

An example using the above techniques will describe a method of evaluating process performance of 16's yarn spun from 3 denier nylon staple. Yarn spun from the existing schedule was testing below expectation and was considered only fair to poor in evenness. The problem was to determine where the degradation of quality was occurring; why this condition existed, and how to correct it. Each operation was evaluated by checking the evenness of material fed in and delivered, and then plotting the I-value on the quality level graph, as shown on Chart III (note "old schedule").

The curve thus traced showed a very fast decrease of I-value through three pin drafting operations; then a prominent hump after processing on a cone finisher, and, finally, a slow decrease resulting in a relatively uneven yarn.

The following data was obtained:

Examination of the data indicated poor performance of the cone finisher. Consequently it was decided to look into this operation. Study of materials at this process disclosed highly uniform sliver fed and very poor sliver delivered. Once this material entered the roving and spinning zones, it contained fewer fibers per cross-section which made each drafting operation more critical with little chance for improvement of uniformity.

It appeared that one way to overcome the difficulty on the cone finisher would be to reduce the draft; the other to increase doublings, or to do both. However, the lowest practical draft obtainable on this machine was 5.0, and an additional increase in doublings would have resulted in excessively heavy sliver. This would mean further increase in draft on the roving and spinning frames, both of which spelled defeat. Therefore, the only other option left was to reduce the sliver prior to finishing.

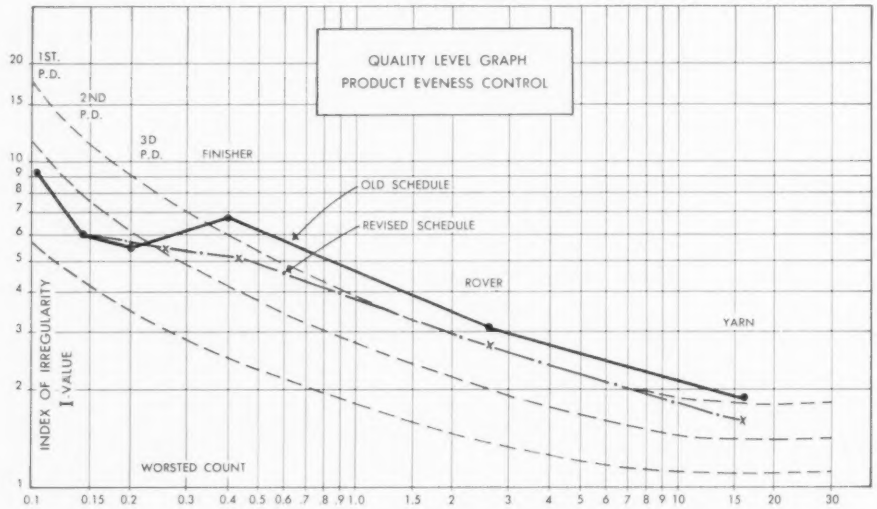

Chart III

Working in reverse from the finished sliver weight and assuming a low draft of 5.0 on the cone finisher with the same number of doublings, a new program was devised. The material was processed using the new schedule and evenness "I" values were plotted again on the quality level graph. (See Chart III—Revised Schedule.) Comparison against the old process indicated improvements accomplished. As may be

(Continued on page 44)

Operation	Weight In Count		Dram/ 40 yd	Weight Out Count		Dram/ 40 yd	Doublings	Draft	I	H
1st Pin Draft	.096	-	190	.103	-	175	7	7.75	9.3	160
2nd Pin Draft	.103	-	175	.144	-	127	6	8.1	6.0	138
3rd Pin Draft	.144	-	127	.201	-	91	4	5.55	5.5	157
Cone Finisher	.201	-	91	.402	-	46	3	6.0	6.8	266
Rover	.402	-	46	2.06	-	7	1	6.5	3.1	220
Spinning	2.06	-	7	16's			1	6.2	1.9	173

* Count-Worsted 560 yds/lb = 1's
Dram/40 yds = 18.3 divided by count

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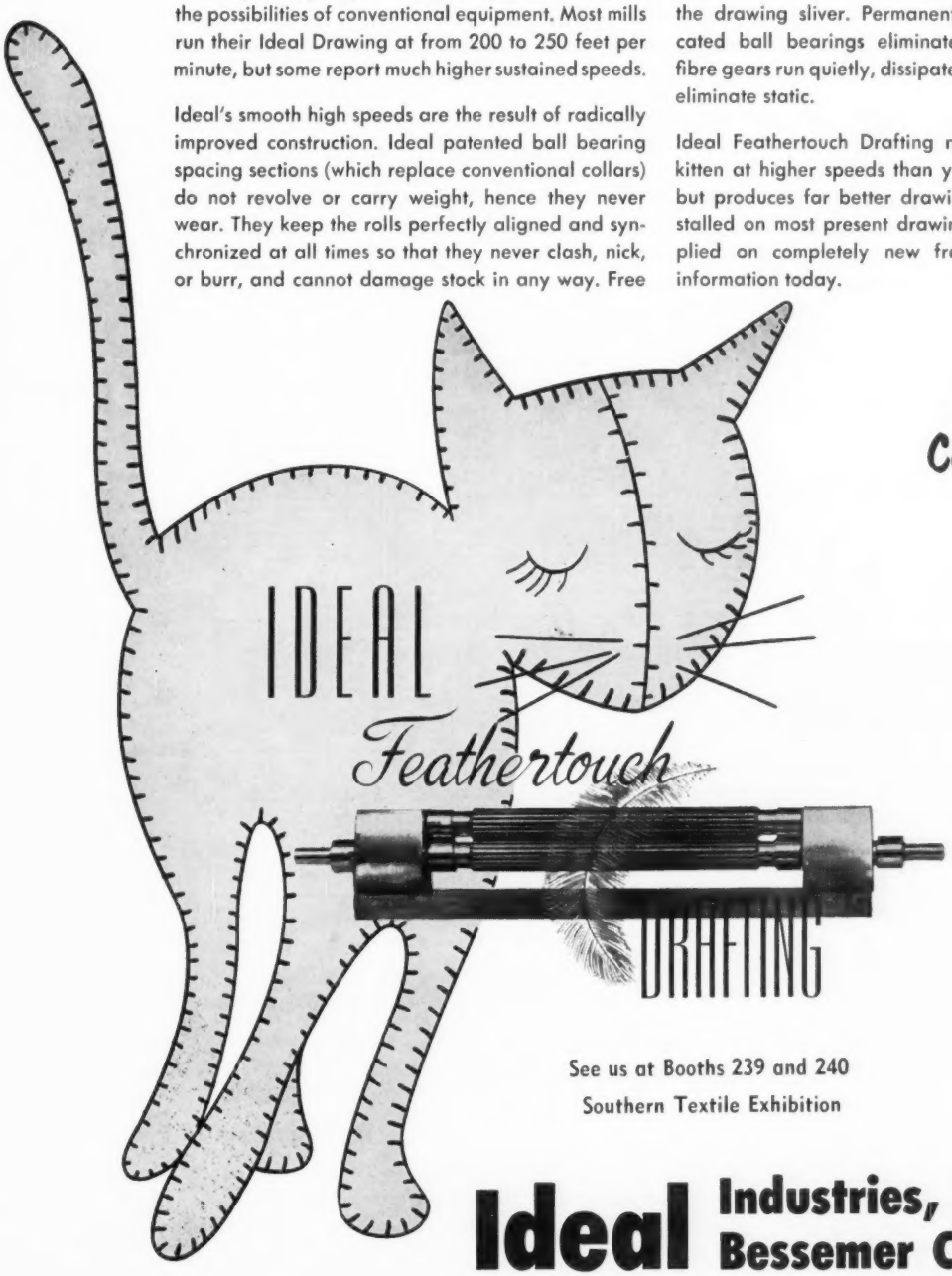

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Evenness Testing

(Continued from page 42)

seen from the data shown below and the graph, the draft on the third pin drafter was increased which produced relatively less uniform sliver entering the cone finisher, but the reduction in draft on the latter unit resulted in a much improved delivery. The following operations performing at the same qualitative efficiency produced improved yarn.

Later on, additional changes in twist, ratch settings and tensions were made to refine some other processing points.

lower limits were not based on the conventional statistical probability levels but on the empirical standards for "even" and "fair" levels taken from the quality level graph. (Chart I)

"I-values" were plotted against time in the usual manner. As long as no value exceeded the "fair" level, the process was considered in-control. This system was found to be very effective and informative. While for this work a Uster Tester was used, a Brush Tester or a Pacific Tester could also have been used.

Conclusion

The use of the Index of Irregularity was found to

Data obtained from "improved schedule"

Operation	Weight In Count	Dram/ 40 yd	Weight Out Count	Dram/ 40 yd	Doublings	Draft	I Out	H
1st Pin Draft	.096	190	.103	175	7	7.75	9.3	160
2nd Pin Draft	.103	175	.144	127	6	8.1	6.0	138
3rd Pin Draft	.144	127	.260	70	4	7.25	5.4	174
Cone Finisher	.260	70	.436	42	3	5.0	5.1	208
Roving	.436	42	2.60	7	1	6.0	2.7	193
Spinning	2.60	7	16's		1	6.2	1.6	146

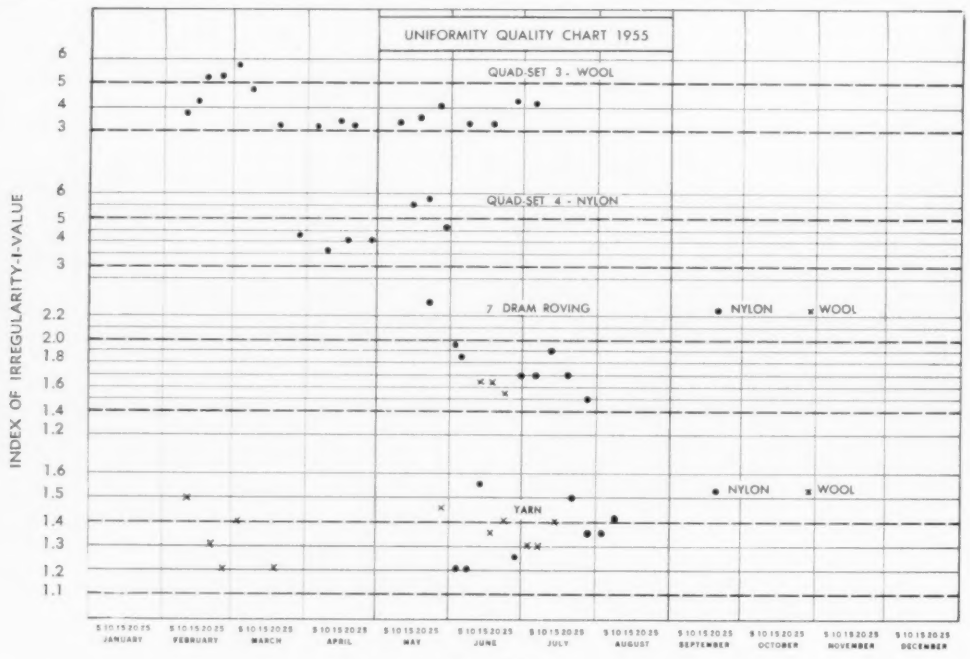

Chart IV

Index of Irregularity was found to be a very helpful tool in conducting other studies similar to the one shown above. It allowed for a simple way of expressing evenness of materials and enabled one to compare uniformities of slivers and yarns made from different materials and fineness.

Quality Control

Eventually this work led toward the establishment of routine quality testing. Regularly scheduled tests were made on the quad (3rd pin drafter) and spot checks made on rovings and yarns. Results were plotted on control charts. These charts were not control charts in the customary sense since the upper and

be very effective in discussing data, comparing results, and charting quality progress. It allowed for a clear-cut interpretation of this difficult-to-express property of evenness of slivers, roving and yarns. It permitted a superior evaluation of variations which in turn lead to important improvements in yarn quality.

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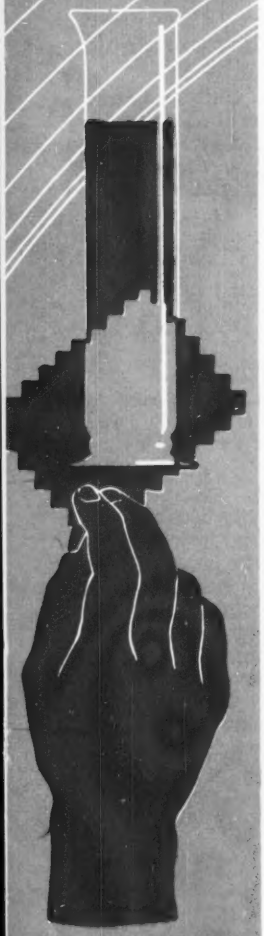
DYEING and FINISHING Section



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Spinning Coloray on the cotton system

Here are practical, detailed instructions for making first-class cotton system yarns when running Courtaulds' solution-dyed rayon staple

By F. DeWitt Benson

COLORAY is the trade name of Courtaulds' solution-dyed viscose rayon staple fiber. This staple is dyed by injection of pigment colors into the viscose solution before it is forced out through spinnerets into a chemical bath where the viscose solidifies to form fibers. The color is thus actually an integral part of the fibers. Consequently extremely fast colors are obtained. Pigments used in "Coloray" are more permanent than most dyes used in conventional stock, package and/or piece dyeing.

Viscose solution coloring was originated by Courtaulds in England in 1938 and has been in commercial production since that date. Current production in England now approximates 25,000,000 pounds annually. Late in 1953 the first commercial production of this type of staple in this country commenced in Courtaulds' plant at LeMoyne, Alabama. Since then there has been a steady increase in demand.

Processing of Coloray is carried out in the spinning mill almost exactly as white viscose rayon staple is processed. The differences in fiber characteristics between different colors and between the colors and white staple are so small as to be barely detectable by the spinning mill.

Blending

Generally speaking, good blending of man-made fibers starts in the opening room.

Requirements of a good blend are:

1. Fibers should be sufficiently well mixed to give yarns which are no more streaky than is dictated by the proportions of the blend, denier and staple and count of yarn.
2. Composition of the blend should be constant throughout the processing of the yarn.

Taking these points separately, the "intimacy" of the blend should be satisfactory in any yarn count provided that blending takes place before carding, and a sufficient number of doublings, at least 72, follow the carding process. When Kirschner or carding beaters are used a well-blended lap with small aggregates of each color should be produced. Denier and staple length naturally are of prime importance in determining the degree of intimacy. For example, a greater degree of intimacy can be obtained by a blend of 1½ denier 1-9/16" fibers than with 3 denier 2", but with normal processing adequate blending should not be a problem. It is taken for granted that all machines are properly maintained and that correct settings and speeds are used.

The retaining of a constant blend composition throughout the processing of a yarn is, of course, highly important. In most mills this is more likely to give trouble than failure to obtain sufficient intimacy.

Some up-to-date mills which have built up a large business in synthetic yarns have installed an automatic blending system. These are, in general, perfectly satisfactory for blending Coloray provided that the accuracy of weighing is checked at periods determined from experience to be necessary for a close control on that particular make of machine. Also, it is, where practicable, worthwhile to check to insure that each blend has actually consumed the weight of fiber it is supposed to have consumed. In other words, check the theoretical blend weight against the actual weight consumed.

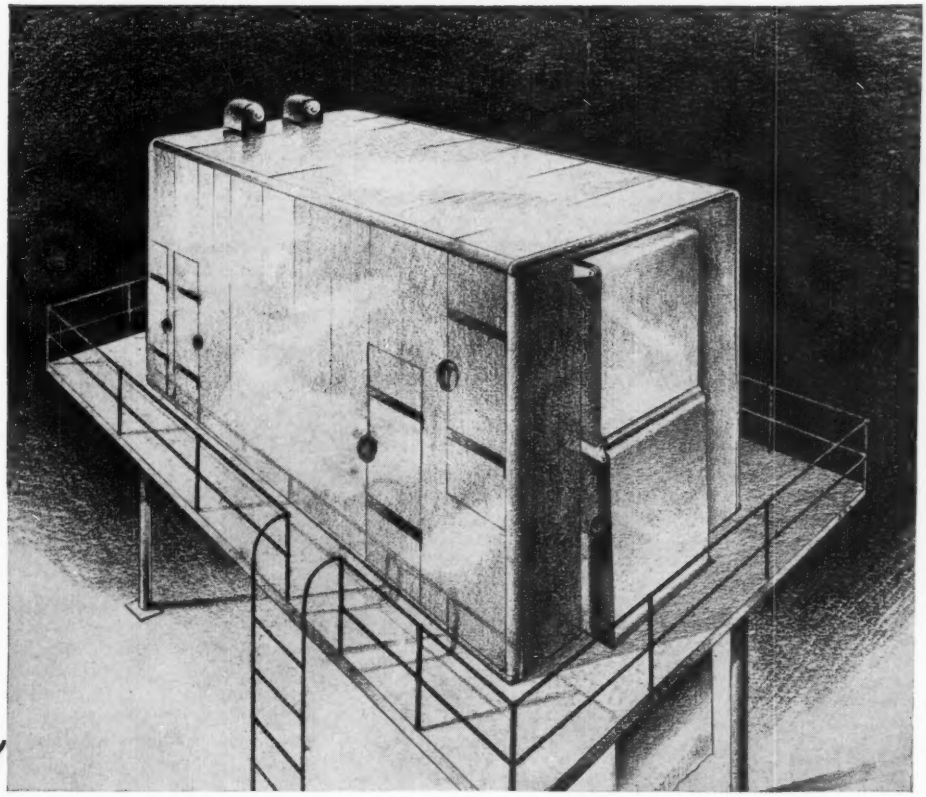
The only case in which these blending feeders do not appear to be too satisfactory is when, for some reason, only about 3% of one color is needed in the blend. In a case like this it is better to make a preblend, incorporating this 3% and then to feed this pre-blend in with other components.

The mill new to blending is probably best advised to blend by weighing in about 25 pound lots, each lot being a complete blend. The lots may be placed on a lattice apron behind the opening hopper. If a lattice is not available, the lots may be thrown directly into the opening hopper, taking care that it is at no time overloaded. For example, a mill running a blend of 50% 1½ denier 1-9/16" black Coloray-50% 1½ denier 1-9/16" bright white rayon staple, and blending in 25 pound lots, would weigh out 12½ pounds black Coloray and 12½ pounds white rayon staple. This lot would then be put on a lattice apron behind the opening hopper, or thrown directly into the hopper itself. When the material becomes low in the hopper, another 25 pound lot is fed in. It is not good practice to weigh in lots which overload the hopper. But on the other hand, it should be remembered that the usual scales and average opening room operator will weigh one lot of twenty pounds with a smaller percentage error than four lots of five pounds each, and so the choice of size of blend lots is, in practice, a compromise.

The blending of Coloray and cotton deserves special mention. In a combed yarn mill it is best to process the cotton and Coloray separately through opening, picking and carding and to blend on either the sliver lap or ribbon lap machine, preferably the latter. This system gives an excellent blend and enables wastes to be kept separate right up to combing. In the conventional carded yarn mill, for best results, blending should be done in the opening room as discussed above, using the opening, picking, and carding speeds which would be used for the grade of cotton in the blend.

It should be realized that in a blend of undyed cotton and Coloray, the white cotton neps stand out

(Continued on page 48)



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Coloray

(Continued from page 46)

much more clearly against the colored background than they do when the neps are the same color as the background. However, this makes attractive effects possible. If fairly clean yarns are desired, however, it is necessary to take the usual precautions to reduce the amount of cotton nep.

Opening and Picking

Coloray staple, like all synthetic fibers, is practically free from impurities and other foreign matter. The textile mill therefore does not have the cleaning problem that it has on cotton and other natural fibers. Because of this, the opening and picking processes are shorter and are not as severe. It has been found that two passages through beater sections are sufficient for viscose rayon staple, including Coloray.

Generally a Kirschner beater is preferred to a blade type beater because of its gentler combing action. However, comparisons made between Kirschner and blade beaters have not revealed any significant damage to the fibers with either type of beater. It is advisable to use stripping combs in all opening hoppers instead of the stripping rolls usually used with cotton.

It is impossible to give one figure as the beater speed that should be used because there are too many variables, but speeds of 800-1000 RPM at a setting of 3/16″ to ¼″ are generally satisfactory. Excessive pressure on the calender rolls should be avoided to prevent damage to fibers and difficulty in withdrawing the lap pin. A pin with a slight taper is recommended. Fan speed and draft should be regulated so that most of the stock is thrown to the top screen. On a 40″ picker producing a 14 ounce lap, the speed of the fans normally will be around 1200-1400. It is good practice to wrap laps in heavy wrapping paper as this will materially reduce waste and prevent contamination.

For best results on rayon, it is generally agreed that grid bars under the beaters on the pickers should be kept, but they should be adjusted so as to take out as little waste as possible.

Carding

On the conventional card, Coloray processes just as satisfactorily in every respect as does white viscose staple. The rate of loading on the cylinder is practically the same for both types, so that the use of Coloray will not require a more frequent stripping cycle. Similarly, the rate of production does not have to be reduced. The successful carding of rayon, as of cotton and other fibers, depends upon accurate settings and adequate grinding. The following settings are satisfactory for processing 1½ denier 1-9/16″ white rayon staple and Coloray:

Flats to cylinder	.010″
Doffer to cylinder	.007
Lickerin to cylinder	.007
Feed Plate to lickerin	.017
Comb to doffer	.022
Back plate to cylinder:	
A. Top	.029
B. Bottom	.029
Front Plate to cylinder	.017 approximately
Screens to cylinder:	
A. Back	.034
B. Bottom	.068
C. Front	3/16″ to ¼″

Both metallic clothing and self-stripping wire have performed satisfactorily on Coloray and may offer some advantages in ease of changing colors at the end of a run. However, practically all of the very large quantities of Coloray are being processed on conventional card clothing.

A lickerin speed of 300 to 350 will be satisfactory on practically all staples and blends. Card clothing manufacturers have a special lickerin wire with a tooth with a vertical leading edge. This is recommended for processing rayon and rayon blends.

Spring tensions are sometimes used on the calender rolls to reduce the size (volume) of the sliver in order to put more stock in the can, thereby decreasing the amount of doffing required. This practice, though sometimes acceptable, is fraught with danger because all rayon staple is more prone to coring under pressure than is cotton.

Drawing

In the drawing operation, either cushion top or metallic rolls may be used, but on fine deniers, 1½ denier or finer, the cushion type is preferred. However, 1½ denier rayon including Coloray is being processed very satisfactorily today with metallic rolls. As with all fibers, the roll settings on drawing depend upon the type of frame and the length of staple.

Static is not a problem with viscose rayon staple, but sometimes blends of rayon and other fibers do give trouble. To reduce the chances of trouble to a minimum, ideal room conditions should be approximately 55% R.H. and 78°F. Although these figures are given as ideal conditions, Coloray, like all rayon staple, processes very satisfactorily under a wide range of conditions.

Roving

Rayon requires less twist than cotton of the same hank roving and there is a natural tendency to insert too much twist rather than too little. Both extremes should be guarded against, as either will produce uneven yarn. Roving with too little twist, even if it does not "break back" in the spinning creel, will stretch, giving uneven yarn, and roving with too much twist will draft unevenly in spinning. Roll settings are again determined by the type of frame and the length of the longest staple being processed.

Care should be taken to see that the tension and lay are correct. It is a very bad practice to permit an operator to "take-up" or "let-off" on the tension during the doff. In processing Coloray it will be found that the darker colors will be more like dull viscose rayon staple in cohesion, and the lighter colors more like bright staple. Because of this, until experience has been gained, each color should be checked for the amount of twist required when it is first started up on the roving frame.

Because of the danger of contamination, it is essential that fly frames be stopped immediately when an end breaks in order to reduce the amount of fly to an absolute minimum. There are two types of stop-motions on the market today for roving frames. One is mechanical and the other uses the suction-"electronic-eye" principle. Either type should prove advantageous in reducing the contamination that will result from this cause.

Spinning

Coloray in the spinning process runs satisfactorily both on the old conventional type of frame and also on new type long-draft frames. There should be practically no increase in the number of ends down as

(Continued on page 50)

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Coloray

(Continued from page 48)

compared with white rayon of same twist and count. There will be a slight increase in the amount of fly in some of the darker colors in comparison with bright rayon, and a slight decrease in yarn strength. However, these differences are small. Yarns spun from Coloray will be found to be more regular, cleaner and less neppy than those spun from stock-dyed staple. Processing will also be found to be much cleaner with smaller amounts of fly.

The type of top roll is very important for processing rayon. Synthetic rolls are now widely used for the processing of both synthetic and natural fibers. Leather rolls are very seldom used today because of leather's high cost. Larger front rolls, both top and bottom, will result in fewer lap-ups. This is also true on drawing and roving.

Twisting and Winding

The use of Coloray presents no processing problems whatever in these processes. End use will dictate the amount of twist to be inserted. On the winder the slub catchers should be set to catch slubs and knots but should not chafe the yarn.

Contamination

There is, of course, a danger of contamination whenever different kinds of fiber are processed in the same mill, either alone, or in blends with each other. The danger when Coloray is being used in a mill is certainly no greater than that incurred when some of the newer and true synthetic fibers are being processed, and is, from some points of view, considerably less.

There is no problem of identification in the mill, since the color of the fiber is its own identification. The only exception to this is when the same color of Coloray is being run in the mill into two or more yarn numbers. In this case, whenever possible the yarn numbers should be spun from rovings of similar hank, so that mixing can occur only from spinning onwards. Spinning and twisting, if any, should then be done on different colored bobbins for the different counts, or positively identified in some other manner.

The second major point is that any contamination which may occur can be seen and dealt with before the yarn or fabric leaves the mill. Generally speaking with regard to contamination there is no easy answer to this problem, but the main factors in the solution are good housekeeping; good supervision; proper handling of all wastes, both saleable and reworkable; and production order, wherever possible, being chosen so that colors as little different as possible follow each other. Contamination is most dangerous in solid colors and plain woven goods, and becomes less dangerous in blends and fancy goods. In actual practice it seems to give little trouble in the fancy goods.

Good Housekeeping

If possible, use a separate opener and picker for colors, and erect a light screen or partition between the color picker and the adjacent white picker. If it is impossible to use a separate picker, great care must be taken to clean out the opening line after processing colors before putting white into the system.

Aprons should be in good condition without broken slats and hooked pins. It is advisable to wrap laps in paper to avoid dropping pieces in transport. Also, laps of each color should be stored together and not permitted to come in contact with laps of other colors. Card stripping on a change of color should be thorough, stripping the cylinder and doffer once, allowing the flats to run clear, then stripping cylinder and doffer again.

Since aggregates of colored fibers are much more objectionable than single foreign fibers, great care should be taken to pick the top and bottom clearers properly on drawing, roving and spinning when colors are changed. In addition to this, of course, the rolls should be picked, and the frames in general wiped free of fly and lint.

Roving bobbins should not be stored either on fly frame creels (on the old system) or on the spinning creel to avoid fly settling on them. Bobbins stored either in card room or in spinning room should be covered to prevent this.

Handling of Waste

No waste should be fed back into the blend without adequate check on its freedom from contamination. It should be remembered that cylinder and doffer strips are particularly likely to be contaminated at the beginning of a run.

A further point to remember is that the presence of neps may ruin a heather mixture blend, and that the danger of nep formation is increased when strips are fed back into the blend. In any fancy synthetic spinning mill, all operators must be trained to handle waste carefully and properly. The handling of Coloray waste is no exception to this rule, but neither is it any more critical. The danger of Coloray waste getting mixed is much less than with some of the other staples and blends which are not as well identified in processing, so that trouble only becomes obvious after dyeing.

L22 and L25 Joined

American Standards Association has announced that its Standard L22 for rayon and acetate will undergo a revision according to "advances in technology and experience of the industry." Standard L22 will be merged with the project on all textiles L25 and the complete project will be designated L22.

Big Caprolan Package

Allied Chemical and Dye Corp. has introduced a new 30-pound put-up for its Caprolan nylon heavy yarns. The package is said to be the largest filament nylon put-up to become available to the textile industry. The yarn is supplied, knotless, on non-returnable paper tubes. It is also supplied on ten-pound packages.

Solution-Dyed Nylon Offered

Color-sealed black nylon has been announced by the Du Pont Co. Available initially in 200-denier, 34 filament count, packaged on standard bobbins, the product will shortly be available in other deniers. The price for 200 denier is $1.80 per pound.

Chrysler Dealers Like Nylon

Chrysler dealers find nylon tires a help in selling new cars. According to a recent Du Pont sponsored survey, 82% of the country's Chrysler dealers believe these tires aid them in clinching sales. The survey was made for Du Pont by Dun & Bradstreet following Chrysler's announcement that its 1956 Imperial and New Yorker models would have nylon tires as standard equipment.

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New Sandoz Dyes

Sandoz Chemical Works, Inc. has announced the availability of two new dyes for use on wool, silk and nylon. They are:

Lanasyn Yellow GLN p.a.f., which is said to have a higher migration power than the type offered earlier. The dyestuff is a homogeneous metallized pigment yielding bright, neutral yellow shades.

Lanasyn Red BL p.a.f., another homogeneous metallized dyestuff, is said to be valuable as a shading element for beige and gray tones. Both dyes are suitable for Vigoureux printing.

Green Toner Pigment

American Cyanamid Co.'s pigments division has announced the addition of Cyan Green Toner 15-3100, a strong, clean phthalocyanine green toner, to its line of durable pigments. The pigment is said to have excellent working properties, with good ease of dispersion and freedom from bodying in protective coatings formulations.

The company recommends Cyan Green Toner 15-3100 for paints, lacquers and enamels, such as automotive finishes, printing inks, plastics and floor coverings, synthetic textiles and roofing granules.

New Bleaching Assistant

An assistant for use in Textone (sodium chlorite) bleaching has been announced by the Arkansas Co., Inc. It is a soft white paste, giving a pH of 8 in water. The assistant, Arko Buffer N, is said to control the liberation of chlorine dioxide in the bleaching operation, thus minimizing the highly objectionable odor characteristic of the Textone bleaching process.

The company also has made available a dispersing agent said to be very effective for dyestuffs. The product, Dispersonol C is anionic in nature and gives a pH of 5.8 to 6.0 in water. According to the company, it disperses more rapidly and uniformly than most dye agents, and has good levelling and retarding action for many types of dyes, which makes it useful in union dyeings of combination synthetic and natural fibers, such as Dacron-wool blends.

Anti-Static Finish

A finish for nylon curtains that is said to end static—crackling and sticking—is now available from Dodgeville Finishing Co., Inc., Attleboro, Mass. According to the company, the anti-static finish means easier handling in the making of nylon curtains, as well as giving the fabric added hand.

THE TOUCH OF THE MASTER—Bill Doniger selects buttons and trimmings for a new cold weather coat. It is this meticulous attention to fashion details by Doniger himself that is largely responsible for the style "rightness" of McGregor garments.

Doniger (Continued from page 31)

the lion's share, virtually everyone in the industry admits, must go to Harry and Bill Doniger.

It was these two tireless energizers and whirling dynamos of new ideas who furnished the tremendous voltages needed to bring about the upheaval in men's attitude toward leisure clothes—an attitude now spilling over into business wear and tending to make those staid uniforms of conformity less uniform, more colorful and easier to wear.

Like all great revolutions, the Doniger drive to make men's clothing more colorful has been actually a long time in the making—much longer than many believe. It started back in 1920 when David Doniger, father of Harry and Bill, decided at the youthful age of 42 that life should be something more than slaving to make money.

After many years as a cap manufacturer, he had accumulated enough money for his needs as he saw them. He got out of business and set out to travel around the world and cultivate the finer things of life. But after a few years of globe-trotting and vast amounts of painfully unaccustomed leisure, he found himself bored. In spite of his determined efforts to relax and enjoy life, his thoughts turned strongly toward the cap trade.

In 1920, he took a trip to England to visit relatives who operated a cap business with the brand name, McGregor. David Doniger decided to import into the United States some of the sportier caps in the McGregor line. As he correctly envisaged it, these headpieces made up in plaids would be appealing to golfers who in those days were multiplying rapidly as the ancient Scottish game caught on among businessmen throughout the United States.

Right from the beginning of his new venture, the elder Doniger piped a merchandising tune his sons were later to build into a complicated counterpoint played by all instruments of advertising and promotion. David Doniger advertised his imported caps in national magazines. Also with shrewd promotional know-how he enlisted golf pros at clubs throughout the country to sell his caps, and he wrote directly to club members telling them how dashing they would look on the putting greens topped by McGregor caps.

The new line caught on, and David Doniger, forgetting all his ideas about retirement, plunged into his new business with enormous zest. More than before, he traveled, but now he was traveling to sell his caps and to find out what men wanted for sportswear.

He was among the first to realize that the growing interest in sports, as well as the increased leisure that shorter working hours were bringing to men were creating an acute need for a whole new masculine wardrobe concept—sports or leisure or play clothes. Call them what you will, they were garments intended for leisure wear as distinguished from the garments men wore to the office or factory.

Sensing this need, he made haste to satisfy it and in doing so, to stimulate its further rapid growth. He imported and advertised golf stockings and knickers. He brought out colorful argyle sweaters and thus created a durable fashion in menswear. When the leather jacket appeared in the mid 1920's, Doniger manufactured them and started their popularity skyrocketing by getting famous movie stars such as Edmund Lowe (remember him?) to wear them and be photographed wearing them.

A few years later, when the business had been enormously strengthened by the addition of David's sons, the rate of growth at McGregor's picked up speed rapidly. Harry Doniger, now president, and 52, joined his father in 1925. Bill, who is now 48, and executive vice president, came into the firm a few years later after graduating from Wharton School of Finance.

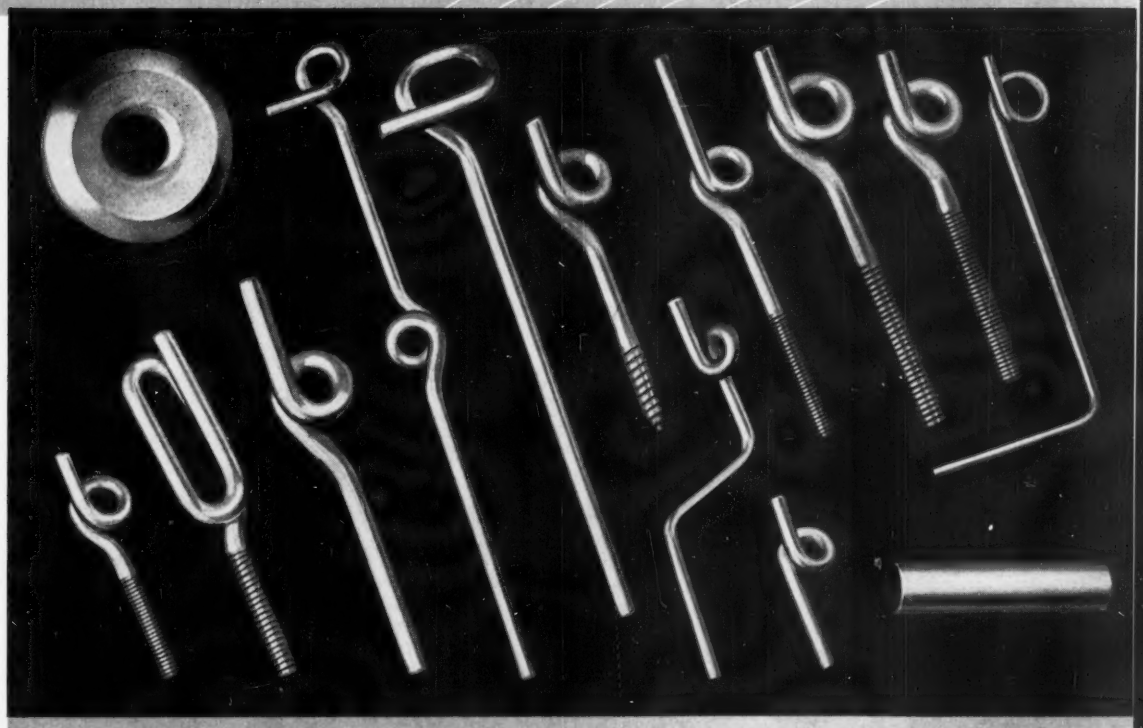
What was remarkable about these two young men was that their zest for the business and their unrelaxing anxiety to make it a success were equal and even greater than their father's. Once on the firm's payroll they plunged into its activities with the hard-driving zeal they have maintained ever since. They took the McGregor line out on the road to sell, and learned the hard way that it is sales and more sales which provide the fuel needed to keep a business expanding.

In time, Harry and Bill, each following his strongest inclinations, worked out a broad division of labor in managing McGregor. Harry took charge of sales, financial and administrative work with the big emphasis on sales. Bill discovered in himself a flair for style and a rare capacity to function as a fashion "editor," as he calls it. By editor he means a talent for scouting out fashion ideas in all parts of the world and adapting them to satisfy the cravings of American males for bolder and more colorful plumage. He has followed his bent to become chief stylist and designer of McGregor's increasing variety of leisure garments. He also takes charge of the company's huge and fast-paced advertising effort.

Since garments are made of woven and knitted cloths, Bill Doniger is deeply engrossed in fabric procurement and development. On his frequent trips to Europe and the Far East he hunts out and brings home a bewildering variety of fabrics and garments for possible use or adaptation in McGregor's constantly changing line of garments for men not-at-work. Most of these sample fabrics are just that—samples. You cannot cut and sew thousands of garments from a few sample cuts of cloth no matter how colorful and attractive they may be. Nor are short runs of a few pieces or so—often all that is available from foreign suppliers—enough to feed the demand for a profitable item whipped up by the hard-driving engines of McGregor advertising and promotion.

(Continued on page 54)

Engineering Section



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MITCHELL-BISSELL CO.

Doniger

(Continued from page 52)

Thus McGregor depends upon American fabric manufacturers to take its ideas and give it the fabrics they need. And since all good things in fabrics do not necessarily originate in France or Italy or India or Japan, McGregor looks constantly to American mills and converters to provide it with new and salable fabrics.

To keep moving into its plants the flow of cloth needed to feed its cutting tables, McGregor today has a piece goods buying department of six men, all expert in the ways of the fabric market. Their job is to search out and buy for McGregor the fabrics Bill Doniger wants for the garments he is rushing to retailers.

Headed by Paul Morris, these piece goods buyers are men who spend little time behind desks. Early in the morning, they hit the streets, fanning out from McGregor's office at 303 Fifth Avenue in New York to make calls on mills and converter showrooms.

"We visit them all," Paul Morris says, "but not everywhere do we find the kind of fabrics we want. For sport shirts, swim trunks and cabana sets and other constantly improving apparel items we need a continuous flow of new and interesting fabrics. Such fabrics are hard to find. Virtually all the cloth we use for these products we require on a confined basis. And in the past four years, an extremely large proportion of these fabrics have been cotton—there is no doubt about it, cotton in sports shirts and related items is strong today while rayon and other man-made fibers are weak."

In buying fabrics where fresh styles and new product appeal rate high, McGregor has obtained best results, Morris says, in working with the big integrated mills such as Burlington, Stevens, Dan River, Mooresville and similar companies. These big outfits are willing to go to considerable expense and trouble to work with McGregor stylists to give them the fabrics McGregor thinks will sell strongly. Also when fabrics come from the large integrated mills, quality is generally high and uniform through piece after piece.

"But don't get me wrong," Paul Morris says, "We love the converters, too. My piece goods buyers and I keep in close touch with the converting trade, and we are always willing to look at the goods they offer —in fact we make it our business to see all the converters quite regularly. But as it works out, the converters we do business with on a sustained basis you can count on the fingers of your hand."

It is true right now as Paul Morris says that in shirts and other lighter garments such as shorts, cabana sets and summer slacks, cotton is dominant at McGregor's. Yet no other garment manufacturer has brought out more items using man-made fibers in a dazzling variety of imaginative ways. During the past ten years, the Doniger brothers have been warm friends and champions of the man-mades and have pioneered in their use.

Not only do they use rayon combined with cotton in their famous Drizzler best-selling jackets, but in many other outerwear jackets nylon, the acrylics and Dacron polyester fiber are used. The "Anti-Freeze" zipper jackets, for example, currently heavily advertised by McGregor for winter sports have an outer shell of 100 denier nylon Taslan yarns and a lining of knitted all-nylon fleece.

Bill Doniger has warm words of praise for the producers of man-made fibers. As an example he cites the good work done by the Textile Research Department of American Viscose Corp. in working out successful ways to weave superior fabrics of rayon and cotton. He speaks warmly of Du Pont with which McGregor carries on cooperative advertising.

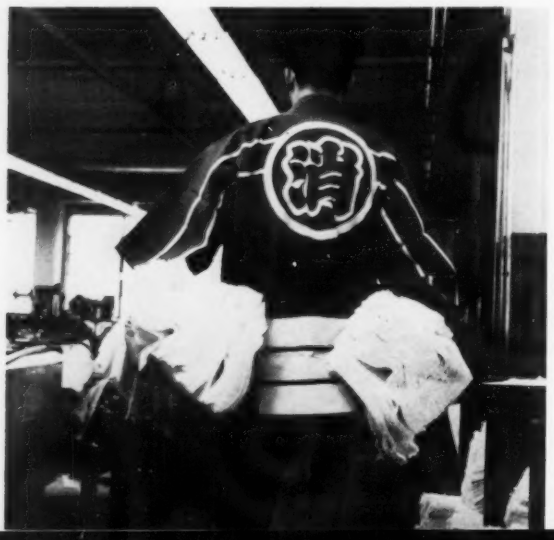
A business that last year sold $47,408,000 worth of leisure wear to American men and boys counts for a great deal in the textile industry. The things its head men have to say about garment manufacturing are certainly bound to be interesting to millmen and converters. Let's listen to some points the Doniger brothers stress when talking about their business.

With Harry Doniger the emphasis is on sales first, last and foremost. He is a merchandiser of genius powered by a tremendous drive for success and astonishing quantities of energy. He believes the way to insure a growing sales volume is first to make sure your company has good products; but good products in themselves are not enough. Once you have items that are salable because they please consumers, then you have to roll up your sleeves, pitch in and sell them hard. Consequently, McGregor's success (sales volume has increased 16 times since 1939) is due not only to successful styles made up into good quality apparel, but to a tremendously dynamic, aggressive sales force coached to win and keep on winning by tireless Harry Doniger himself.

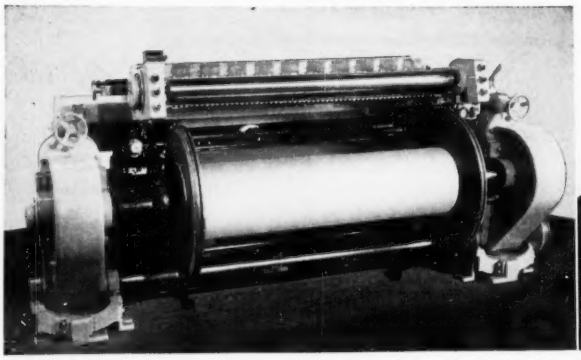
Sales drive at McGregor is muscled by a high-powered advertising and promotional program, a very special interest of both Donigers. Based on colorfully illustrated spreads in national magazines, McGregor's advertising-promotional program is skillfully organized so as to give everyone of the company's 7,000 retail outlets help in making sales. The measure of McGregor's faith in advertising as a sales lever is indicated by the fact that for every one of the past four years the company spent over $1,000,000 for this purpose.

Another essential ingredient in the McGregor growth is the fact that it has pioneered in constant improvement of product. As everyone knows, social and economic changes in the United States in the last 30 years have powerfully favored increased buying of leisure garments. People have more leisure; life has become more informal, freer, gayer. Hence, men have wanted the easy-fitting, relaxed, brightly colored clothes that express the mood of the times. This trend is something that McGregor has helped mightily to grow, but it is not a trend McGregor has created. It was a great wave of the times, and the Donigers launched their boat to ride that wave.

(Continued on page 56)



BRIGHT NOTE FROM NIPPON—A worker in McGregor's Dover, N. J., plant wear tests a new style in leisure coats brought back from Japan by globe-trotting style hunter, Bill Doniger. It is called the Happi Coat and McGregor expects to add to the happiness of American men by selling a lot of them.



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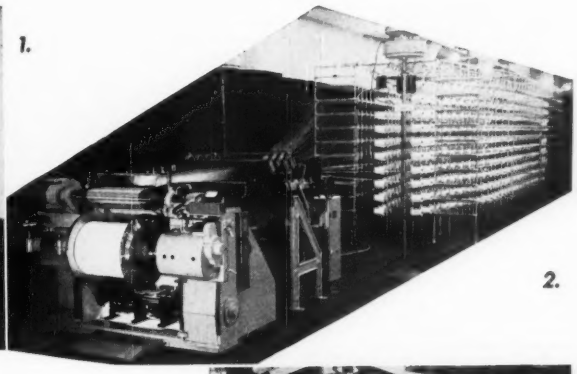

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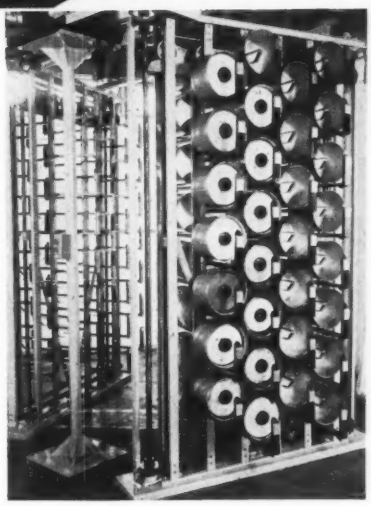
Shown here are only five of the modern machines in Cocker's line—each the leader in its field. Cocker produces every piece of equipment you need for superior warp preparation—for every type of yarn. For over 40 years, Cocker has specialized in the designing and building of warp preparatory equipment and the name Cocker has become synonymous with the utmost in economy and efficiency.



3

Cocker Has Pioneered

Almost without exception, every valuable new feature on warp preparation equipment has appeared *first* on Cocker machines and has been incorporated in competitive equipment only after a lapse of several years. Even more important, no new feature introduced by Cocker has ever been discontinued because it failed to perform satisfactorily. Research by Cocker's engineering staff has often worked out new problems before the trade was fully aware of them.

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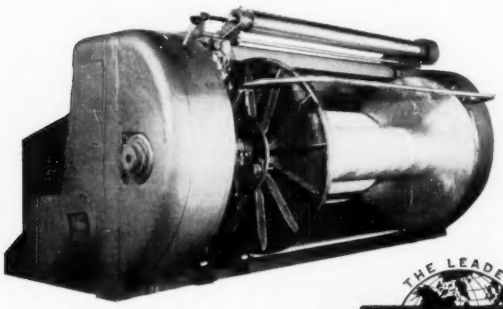
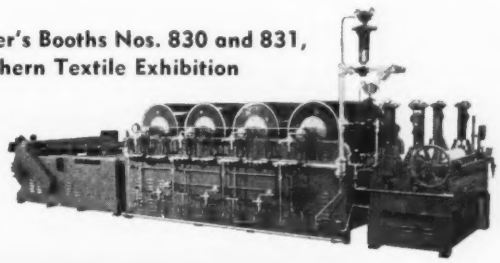


4.

Visit Cocker's Booths Nos. 830 and 831, Southern Textile Exhibition



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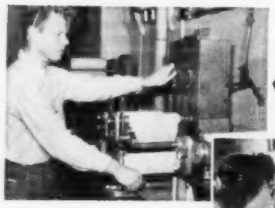
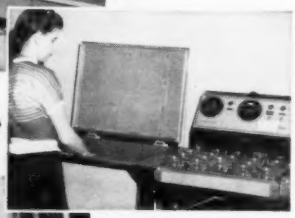


MINIATURE AUTOMATIC DYE JIGS

CHECKING COLOR UNIFORMITY

NEW RESIN APPLICATION LAB



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NEW FABRICS

NEW YARNS

Nylon Bedsheets Gain

Increased consumer interest in nylon tricot sheets has developed in recent weeks since reduction in the price of nylon yarn made possible a retail price of $2.98 white sale for a fitted bottom sheet.

With increased consumption in view, the Warp Knit Fabric Manufacturers Group, National Federation of Textiles, Inc. has developed and approved three standards for tricot fabrics for use in bed sheets.

Rugs with Lurex MM

Scatter rugs by Regal Rugs, Inc., North Vernon, Ind., are offered in a cut pile treatment with Lurex MM (metalized mylar) combined with rayon and nylon. The rugs are available in powder blue, peach, mint green, lemon, black, white, aquamarine, platinum, pepermint pink, toffee cream. Three patterns are offered—"Treasure", "Monte Carlo", and "Coronet"— in oval, square, round and oblong shapes, measuring 21" x 34" to 4' x 6'.

New Beaunit Fabrics

Beaunit Mills recently added two novelty sportswear fabrics to their line of fall fabrics. One, an Acrilan jersey with a novelty stitch, is said to be suitable for women's blouses. It is offered in red, cocoa brown, and yellow.

The second fabric is a combed cotton with a yarn-dyed check pattern, knitted in a number of color combinations. It is suggested as a fabric for men's and children's T-shirt styles.

Tablecloth Finish

Redi-Set-T, a new finish for tablecloths which is said to repel stains has been developed by Northern Dyeing Corp., Washington, N. J. According to the company, Redi-Set-T does not change the hand of the cloth, but is processed in such a way that the basic fabric retails its normal identity. It can be used on pure linen, cotton, rayon, cotton and rayon blends, printed or plain.

Doniger *(Continued from page 54)*

Another element of importance in McGregor's business and equally important to everyone making apparel fabrics is the need of speeding fashion obsolescence.

"If we waited until consumers wore out their clothes before we could sell them something new, our business and the entire menswear business would not be big or profitable," Harry Doniger never tires of pointing out.

"But," he adds with great emphasis, "fashion obsolescence is not enough to keep our business growing. Along with an awareness of the importance of fashion we must work to bring out new and useful products—in our case, of course, apparel—products that will appeal to consumers enough to make them spend money to own them."

"The hard fact is," Bill Doniger says, "that many apparel manufacturers have depended for too long for increasing volume on the purely gimmicky aspects of fashion—the fads, the colors of the season, and all the other tricks of artificial style obsolescence. If instead they would take their lead from the hard lines makers and enrich their new fashions with new products they would be able to satisfy expanding consumer needs and thus assure for themselves steadier growth." ■

Record Turnout Makes Golf Tournament Outstanding Success

A record attendance of 260 members and guests made the annual golf tournament of Textile Distributors Institute last month the greatest success since the first tournament was held nine years ago. The tournament was held at Shawnee Inn, Shawnee-on-Delaware, Pa., June 13-15.

Larry Stafford, Burlington Industries, won the Herman Chopak memorial trophy with a low gross of 73-6-67 among Class A players. Abe Kirschenbaum, Pedigree Fabrics, took second low gross with a score of 74-10-64 among Class A players. William Spaulding, William Skinner & Sons, took third place with 74-12-65. Low net for Class A golfers went to Merwin R. Haskel, United Merchants and Manufacturers with 78-9-69. Mr. Stafford won the Herman Chopak Memorial Trophy while the Jules Chopak Memorial Trophy was awarded to Mr. Haskel.

In Class B, Charles W. Carvin, Sr., Charles W. Carvin & Co., Inc., was low gross winner with a score of 78-15-63. Harry Banner, Pedigree Fabrics was second with 87-16-71 and Ben Feinman, Rosewood Fabrics was third with 88-18-70.

High point of the two day outing was the annual TDI show staged on the evening of June 14. Rehearsed and directed under the expert supervision of Charles W. Carvin, Sr., Charles W. Carvin Co., Inc., the show was entitled "TDI Jitters of 1956." Featured in the evening-long performance were a host of talented singers and actors drawn from the ranks of the textile industry. A rich variety of parody songs and laughable skits good naturedly kidded the current situation in textiles.

The show was opened on a note of heart-felt sincerity when Andrew J. Sokol, J. P. Stevens & Co., Inc., sang a song, "After I've Gone" to the tune of the current hit "Now That You've Gone." Sokol's song was dedicated to Lyman Frieze who recently retired from the Duplan Corp., and who for many years was a leading participant in TDI shows. It was originally intended that the song be sung by Mr. Frieze himself, but he was not able to be present.

In fast succession, one skit followed another. Among them was a Liberace take-off by Bud Schlesinger, Chemstrand Corp., as Liberace singing "Wash and wear, they drive us batty with their wash and wear" to the tune of "Baby Face," and Louis J. Brenner, Hess, Goldsmith & Co., Inc., as George Liberace, singing "Celaperm and Cotton" to the tune of "Love and Marriage."

Other outstanding sketches included Richard Deneau, Richelieu Fabrics, Inc., dressed as Rigoletto singing a satirical ditty about the Opera Luncheon Club to the tune of "Donna e Mobile," and Lon Nave as "Bob Puffines" singing a number entitled "Let's Spin Off" to the tune of "Don't Fence Me In."

The final series of sketches that topped the hilarious evening were presented in a group entitled "Ozark Jubilee" with Charles Carvin, Sr., playing Ma Perkins, Radebaugh, Du Pont Co., as Pa Perkins, Lon Nave as the first son, Terry Kilborne, William Skinner & Sons, as the second son, and John P. Maguire, Jr., John P. Maguire & Co., Inc., as the third son.

Outlook *(Continued from page 30)*

The conclusion is justified that this large investment in fabric development is causing a multiple concentration upon this strategic problem of textile distribution —putting new ideas over with less delay.

Technology has greatly increased the possibilities of fabric development.

The heavy investment made by basic producers in new fabric ideas has greatly speeded up process of fabric development.

The bottleneck that has prevented these ideas from getting more quickly into circulation is at least partially responsible for the depressed condition of the synthetic textile industries at the moment. And since the companies which have made this investment in new fabric ideas cannot afford to have them lie dormant, their growing efforts to break this bottleneck can be counted among the favorable factors in the outlook for man-made fabrics in the next two or three years.

Unity on Label Meanings Would Help— How does the consumer try to assure herself of satisfactory quality in the textile finished products she buys?

At the moment, she has only limited recourses:

One is to rely on the reputation of the store in which she buys (and many stores use their private label to denote minimum standards of quality).

Another is to rely on a nationally advertised brand name.

A third is to rely on whatever hang-tag may be on the garment.

This situation is confusing, to say the least. With new fibers and finishes coming along, the number of nationally advertised brand names has been substantially increased. And if the hang-tags attached to the garment by the cutter are left on (some stores cut them off) every rack of merchandise confronts the consumer with a bewildering variety of claims and instructions for care.

This confusion will continue, and will continue to handicap textiles in their competition with automobiles, refrigerators and television sets, until the basic elements in the industry get together and say: "Here is a single sign, or label, or identification, which assures satisfactory quality for the consumer, and a minimum of complaints and returns for the retailer."

The industry, by working individually, is trying to sell too many labels to the consumer. By putting its combined efforts behind a single identification, it would cut the cost and multiply the results. ■

PAPERS OF THE
AMERICAN ASSOCIATION FOR
TEXTILE TECHNOLOGY INC.®

New developments in silk

Current trends in silk supply

By George Elbogen

Stable prices, improved quality, greater uniformity mark today's shipments of silk

SILK was formerly the main export article of Japan, but this is no longer so. Shipbuilding, canned fish, photographic appliances and other articles are, from a money value, more important than silk. But silk is still very important to the economy of Japan as it is the only export article of total Japanese origin.

Before the war and before the advent of nylon, the Japanese crop was in excess of 800,000 bales, but is now only about 300,000 bales. This is due not only to the smaller demand created by the loss of consumption of silk in the hosiery field, but also to a change in agriculture in Japan: today it pays the farmer better to grow larger crops of wheat and food products.

George Elbogen

Mr. Elbogen, a veteran of the silk trade, is president of George Elbogen & Co., Inc. He is also president of International Silk Association, U.S.A., Inc. and past president of the American Silk Council. Mr. Elbogen is a governor on the board of the Commodity Exchange.

Up to this year it was not difficult to dispose of all raw silk produced in the world. We always were faced with the fact that from one crop year to another, insufficient surplus or carry-over existed. This often brought about a slight squeeze in supply by the end of the season.

However, the Japanese put in effect a five year plan to increase the crop by about 10% yearly. This effort, however, is naturally subject to climate conditions. This year there will be a slight surplus by the end of the crop year which is the end of June. We are assured that an ample supply of raw silk will be available for export and domestic consumption.

It is estimated that consumption of raw silk in the United States will increase this year by about 10% while Japanese consumption will remain at 1955 level. The latter is due to a tendency in Japan towards western dress which will curtail the purchases of kimonos, but this will be counteracted by increase in population. For the first five months of this year the consumption of raw silk has increased again over last year. In 1954 the United States consumed in the first five months 17,526 bales; in 1955 22,453 bales; and this year 24,563 bales. So there has been in the past three years a constant increase from 10 to 15% in the consumption of raw silk in this country. Japanese exports of raw silk are running at the present time at the annual rate of 80,000 bales or 10 million pounds of which the United States uses 60,000 bales, or 8 million pounds. To this you have to add the raw silk used in the export of silk fabrics which are running at an annual rate of 15 to 18 million yards at the present time and consume about 30,000 bales of raw silk or 4 million pounds.

One of the problems which always has plagued the silk industry has been violent price fluctuations. To overcome this difficulty, a price control was put into effect by the Japanese Government which, although not perfect, has worked quite well and the mechanism is constantly being refined. This control is strictly enforced and no sales or trades are being permitted below a minimum price for "A" grade of 190,000 yen

($4.00 F. O. B. or $4.25 New York), or a maximum price of 230,000 yen ($4.83 F. O. B., $5.00 New York), or a total spread between the high and low of about 15%. In comparison with other natural fibers like cotton, wool, flax, etc., this is not excessive. This is pointed out because many people are afraid to use silk because they believe they may be confronted with a severe loss due to a drop in price. This fear is not warranted at the present time.

The pre-war price of silk was about $3.00 to $3.50 per pound and it is now from $4.00 to $4.50 per pound or a smaller increase than most fibers. During the last few years great progress has been made in improving and controling quality of raw silk. Through cross-breeding of silkworms, larger species of cocoons are produced which not only yield a stronger and cleaner filament but unwind more easily and consequently yield more fiber. Also, no yellow cocoons or yellow raw silk, with their higher boil-off, are now produced.

There have been some experiments made in Japan with regenerated silk. But these have not been successful. In fact, there has been a tendency to abandon further research along these lines due to the fact that the Japanese have not been able to overcome these difficulties.

The testing and grading of raw silk has also been vastly improved and brought up to date. Before the war, the emphasis of silk testing was put on seriplane evenness as it was then demanded by the hosiery industry who were the largest users of silk. Now the emphasis is put on the ecart or size deviation and cohesion, which suits the weaving industry much better.

A world classification and contract has been established which is accepted by all consuming countries, whether in Europe, Asia or the Americas. This does away with re-testing which used to be prevalent before the war. The tests of the Japan Conditioning House are just as strict as those of the United States Testing Co. Innumerable test checks were made to put all testing on a par.

Also, before the war, silk was sold on a basis of conditioned weight plus two per cent, which brought about only confusion. Now silk is sold only on a net conditioned weight basis, so there is at no time any dispute in regard to the weight of silk purchased. Furthermore, raw silk is available in double skeins (7½ ounces against 4 ounces) which reduces the cost of winding and fits in with the larger spools used in modern mills in this country. One skein just fills one bobbin and eliminates doffing and extra knots.

Experiments are also being carried on to change the make-up and sizes of books and also to deliver silk on cakes. Those experiments have advanced considerably; there are still some slight difficulties which the Japanese are trying to straighten out. One experiment is to find a proper method of having the silk graded or tested by the Conditioning House in Japan. Another one is to arrive at a proper net conditioning weight since, in order to unwind the cakes properly and efficiently, a certain amount of lubrication must be put on the silk. Naturally, the purchaser wants to find out exactly and pay only for the actual fiber which he receives.

The Conditioning House in Japan is working on this problem now. I believe that within a year or so silk will be available on cakes. Also of importance in this connection is this fact: after discussions with customs authorities here we have received a ruling that silk on cakes is free from duty, which is not the case with silk on cones.

Members of a Japanese silk grower's family feed mulberry leaves to the silkworms.

For yarn dyed silks, poor exfoliation, tendency of filaments to split into their component fibers, has always been a problem. Through biological research and cross-breeding this difficulty is no longer so serious. Good-sized quantities of raw silk are pre-tested in Japan as to exfoliation, and consequently there is always a sufficient supply of exfoliated silk held by dealers in New York and available to manufacturers.

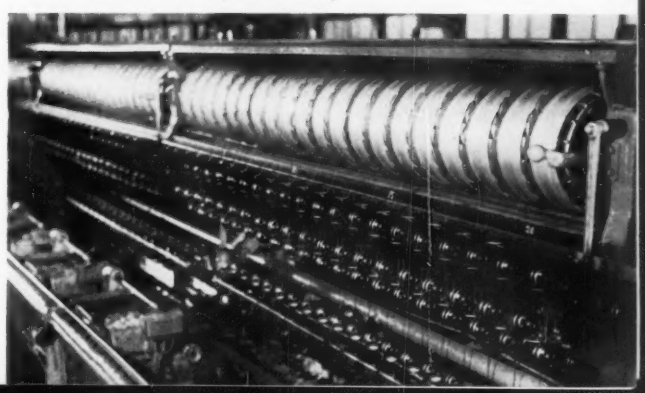
During the last few years a new development in the silk picture has taken place and this is the increased consumption of douppioni silk. As you know, douppioni is produced when 2 silkworms simultaneously spin fibers in one cocoon, which are then called double cocoons. The use of douppioni was formerly small, but is running now at the rate of 15 to 18 thousand bales per year in the United States, or about 25 to 30% of total raw silk consumption in the United States.

The sizes mostly reeled are: 50/70 denier, 100/120 denier, 200/250 denier, but on special orders 190/220 denier is also reeled. Although technically speaking, douppioni should be reeled from double cocoons, this is not always the case these days.

A few years ago about 11% of total raw silk crop was double cocoons, and due to lack of demand brought very poor prices in the cocoon market. The sericulturists consequently hit on the idea to put the silkworms into smaller cubicles to hatch, and they succeeded in decreasing the double cocoons to about 6% of the crop.

This naturally had its disadvantages. The demand for douppioni increased and reelers were faced with the fact that insufficient supplies of double cocoons existed to supply the demand for douppioni yarns from foreign countries. They consequently started mixing single cocoons—usually of poor quality which were not fit to be reeled into raw silk for export—with double cocoons. In some cases 70% double cocoons were used and in other cases 50%. In fact some reelers use only 30% double cocoons.

Automatic reeling machines, developed in recent years, have speeded up output of silk in Japan. The machine unwinds five cocoons at one time and reels the filaments together. New sets of cocoons are picked up automatically.



In preparation for shipment abroad, raw silk is bound into "books" by girl workers. A "book" contains from 50 to 60 skeins and weighs about 4½ pounds.

On the other hand, the better douppioni reelers are constantly striving to improve the quality of their product. They are using four or six lacings now to improve the winding. They are reeling double skeins and are more careful in mixing of cocoons. There have been complaints here in the fabric market that the cloth will not hold in the seams due to long stretches of fine silk which is caused by too large a proportion fo single cocoons of poor quality mixed with the double cocoons.

Then there are complaints regarding crysalis or black specks which will not bleach out in light shades, and which in darker shades may take a different color. This can be avoided to a large extent by having these defects picked out at the reeling mill at a small additional cost. There are also complaints regarding uneven dyeing of the cloth which, in my opinion, is also due to the mixing of double and single cocoons.

In view of these factors weavers buying douppioni should look not only at the price but confer with their raw silk suppliers and tell him exactly what they need and in what shape or form they want to use douppioni. The raw silk supplier will be happy to cooperate with you; he is here to serve you.

There have also been improvements in Japan in reeling silk, and one of the most important of these is automatic reeling. Today most of the large reelers are using the automatic reeling machine which not only increases the evenness of the silk but also helps to reduce the cost of reeling silk and, in that respect, to avoid the price from going too high.

Here in this country improvements have been made in throwing, dyeing and weaving silk. Throwsters use larger packages today. They have installed lacing machines and improved soaking solutions.

Quite a lot of silk is being used now for mixture cloth. Whether with synthetic or natural fibers, silk adds—sometimes strength, sometimes lightness, sometimes feel or brilliancy of color, and sometimes only the prestige of the name "silk," which is still the luxury fiber of the world.

Then there is the matter of silk blends. Waste silk, noils and peignees are blended with other fibers like cotton and wool to produce very attractive and serviceable fabrics. However, under a Federal Trade Commission ruling the preponderant fiber in a mixture or blend must be mentioned first. Unfortunately, this has not been adhered to always. We have come across instances where a cloth was advertised as silk worsted which contained only 5% silk. The International Silk Association is watching this development closely, and will take steps if necessary to make manufacturers or converters adhere strictly to the Federal Trade Commission ruling.

With silk becoming more popular and being used for many new purposes, it still only represents one-tenth to one-fifteenth of one per cent of the total fiber consumption of the United States. Consequently, silk is not a competitor with other fibers but is in a niche of its own.

Undoubtedly, you will also be interested in the effect the importation of Japanese silk fabrics has upon textile manufacturing in the United States. The largest imports are in light-weight fabrics like habutaes and scarves which are not woven here.

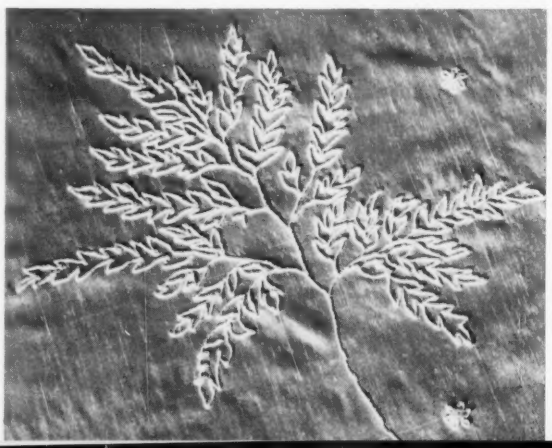
Some heavier fabrics are being imported, but when it comes to fabrics weighing more than 16 pounds per hundred yards, the Japanese, as a rule, are not competitive. Some yarn dyed pure silk fabrics are coming now, but only in darker shades as the percentage of seconds in light shades is too large to overcome any price advantage that may exist.

Some of you may be thinking about the effect that trading with China might have on the silk market. It is my personal opinion that no trading with China in raw silk will be permitted until such time as Communistic China has been admitted to the United Nations. When that will happen I do not know.

Some Chinese raw silk is being exported at the present time to Europe. Switzerland, France and Great Britain are buying a certain amount of raw silk from China. But the trade is difficult because uncertainties about quality and deliveries, and, strange to say, in the last few months it has dropped off again. However, considerable quantities of Chinese raw silk are being shipped to Russia and to the satellite states, especially Poland and Czecho-Slovakia where, due to better living conditions at the present time, a good-sized demand for silk fabrics has sprung up again.

Fortisan and silk bedspread

Cabin Crafts, Inc. are offering a bedspread made of white fabric woven of Celanese Fortisan, rayon and silk. The spread is decorated with a scatter design of leaf sprays and small blossoms outlined in Chateau embroidery. Dust ruffle and separate topper are priced as a unit, to retail at $200, single size, and $230 double size.



Silk in modern fabrics

By Frederick Muller

New warping and weaving methods, new constructions bring new life to silk

It was not until 1946 that raw silk made its reappearance in our markets following its disappearance during World War II. It took a few more years before silk fabrics once more became known to the public. By that time we had a new generation who knew little or nothing about the attributes of silk. The country was hungry then for almost all types of woven goods and, as a result of the pronounced postwar prosperity, silk fabrics once again rapidly came back into favor.

Fortunately for silk, that same period coincided with a radical change in fashion. Paris came forward with the bouffant silhouette. As always when fashion changes, such changes must start at the top in order to carry through successfully. Thus were re-created the well-known basic 100% pure silk weaves as we still have them today. These were the yarn dye types such as taffetas, satins, the heavy failles, baratheas, and peau de soies. These fabrics were handled almost exclusively by old-line silk weavers who worked on the principle of maximum quality and low speed rather than at high speed.

This fashion, emphasizing the "dressy" dress rather than the street dress, brought along many other, newer and lighter-weight versions, such as plain fabrics for piece dyeing, including those used for printing, such as silk shantungs, twills and foulards, replacing the pre-war favorite known as the 55 x 84 lightweight crepe. These fabrics found more and more acceptance by weavers who adopted the silk fiber to their more streamlined and modernized methods of winding, warping and weaving.

Warping, for instance, graduated from the old-fashioned horizontal section band warper to the high speed silk system running up to a thousand ends per section bands from cones instead of spools, containing on the average 1½ lbs. of silk. Even the cotton warping system has been tried out and, as is my understanding, has proven successful in many instances, especially with mass produced items such as foulards and shantungs. Personally, I consider the silk system type of warping preferable as it lends itself to a more thorough cleaning operation of the raw silk.

To cite an example between warping from spools on the horizontal warp as compared to the conical equipment used on the high-speed warping silk system—such speed can be increased 3 to 4 times.

Another development of important significance, which took place soon after the war, bringing about a completely new concept in silk constructions and applications was the now famous 130-end warp of 20/22 which is handled either in the raw state or in gum dye colors, chiefly black. This actually marks the first time that raw silk in its unadulterated form was used for apparel wear.

As fashion reached ever further down to the more popular price categories, still demanding bouffant and even stiff materials, the so-called 130-end silk warp found a host of followers out of which grew many textures of the lightweight variety—to name only one—the antique taffeta—which held sway for many seasons. A good many of these fabrics were sold—and still are—as loomstate, or what is more commonly referred to as "loom finish".

More and more mills participated in the silk parade and there were many which were newcomers in the art of silk weaving. In a way this gave them the advantage of looking upon silk much like any other fiber of the synthetic variety and they handled it accordingly. These mills also had the advantage of controlled humidification which proved a distinct asset in handling silk. In addition, wherever possible, 20/22, which has long been the leader, was displaced with coarser sizes, for reasons of achieving improved productivity. It is now not uncommon to find 24-loom stands per weaver—and more—operating silks with efficiency of 90 to 95%, a concept which is indeed new as compared to operations before the war.

This now brings us to the more recent period of the last few years when, for the first time, silk has entered new fields by means of mixing it with other fibers both natural and synthetic. This has meant a challenge to all of us who have an interest to see silk continue and to broaden out into more and more end uses and type of textures. One could not possibly enumerate all of them. The list is steadily growing just as the public's taste has become more diversified and more individual.

I would like to single out just one such category: the now widely known silk and cotton. In this group alone we have a great wealth of styles and constructions. Some say, and perhaps rightly so, that we have too many items and not enough yardage of one kind, but this again reflects individual creativeness and desire for variety, textures and colorings.

Roughly speaking, silk and cottons fall into two

Frederick Muller

Mr. Muller is president of Stunzi Sons Silk Co. and an active member of the Arbitration Bureau of the National Federation of Textiles. Mr. Muller has been a member of AATT for many years.

groups, one being the end and end warp construction, the other one the silk warp construction which is cotton-filled. Both of these, in the majority of cases, are executed by the yarn dye process. In these fabrics, silk content for the most part, varies anywhere from 6% to 30%. The colorings are chiefly obtained through the use of yarn dyed cotton—silk on the whole acts as the binder and makes for a lightweight yet fairly firm texture.

The more popular items in this range are silk broadcloth made on the 130-end warp, or the peau de soie types—raw or gum dyed—with 160 ends. Other items include synthetic-filled plain and slubby textures in acetate or rayon also woven on the 130-end warp. These have found particular favor for party and bridal wear.

Many silk and cotton fabrics not only found ready acceptance for ladies outerwear but have also invaded the men's shirt business. One only needs to look at the men's shops to be convinced of the great variety of stripes and checks now available, many of which contain silk in part at least.

Of great help in bringing about these newer styles of mixtures was the fact that the weaver no longer had to depend on 13/15's and 20/22's alone. Japan had made great strides in perfecting and bringing to this market the coarser sizes as well, such as 24/26, 28/30, 30/32 and 40/44—the last one being particularly adaptable for end and end use with other yarns —be they cottons, spuns, worsteds or synthetics. Within this latter acrylic fiber classification there is an increasing interest in mixing silk with acetate yarns and Orlon. In my opinion, very good possibilities exist in combining silk with acrylic fibers, filament or spun, especially for the better trade of women's apparel where a rich and mellow hand is desirable.

Coming back to the 100% silks, an interesting development is the Pesanti group which has found particular favor for menswear. Though some of these fabrics were imported chiefly from Italy, there is a very definite need and a growing acceptance for domestic made goods made from Japanese douppioni.

As to weaving technique for these fabrics this probably comes nearest to the concept of hand loom weaving. High speed or modernized equipment is of little help in the manufacture of these types though some mills are known to have made good strides even in this direction.

On the whole, however, fabrics of this type are woven on 4 and 6 loom stands at lower than average speed. Constructions and weights range from 28 to 45 lbs. with constructions varying according to the end use desired as well as to the ability of the individual weaver to obtain best results in weaving.

In some instances finer size douppionis are plied, in others a coarser douppioni is plied with silk greige, and in some cases also organzine twist is applied to the douppioni to give better performance on the loom. Pre-treating, such as soaking, of the raw stock is obviously of the greatest importance so as to render the douppioni yarn as pliable as possible and to withstand the friction on the loom in getting the douppioni through the reed.

A similar story could be told with regard to spun silk which within recent years has found many new uses, particularly for men's shirtings and tweedy textures for men's and women's suits combining spun silk with fine woolens.

In summarizing, I believe it can be said with perfect accuracy that silk is once more making important gains as a fiber for fashion apparel for both women and men. In view of silk's increasing importance it is well to remember that this fiber should not be employed as a mere "gimmick". Silk should be used only where it fulfills a definite purpose just as we go about employing other fibers for given purposes on the strength of their known properties.

When new fabrics are styled, the percentage of silk content should be result of careful study as to what styles and for what end uses such fabrics are intended and what such percentage will mean in turn to the finished product. Sometimes as little as 5 to 10% may entirely suffice, whereas in other instances such a percentage might well prove detrimental to the fabric as a whole.

PTI Adds Marketing Degree

The Philadelphia Textile Institute, School House Lane and Henry Avenue, Germantown, Pa., will for the first time in its history deviate from its traditional scientific textile curriculum and present for the 1956 Fall semester, a new four-year course of study leading to a B.S. degree with a major in textile management and marketing. Seventy per cent of the academic time will be spent on business administration courses including economics, accounting, marketing, industrial relations, quality control, merchandising, statistics, and market research, in addition to courses in liberal arts. The remaining 30% of the time will be devoted to technological background courses in textiles.

Industrial to Offer Tire Cord

Before the end of this year, Industrial Rayon Corp. expects to be offering nylon tire cord for sale. By June the company looks forward to completion of a small commercial production unit for nylon tire cord at its Covington, Va., plant. The initial capacity of the unit will be at least 1,000,000 pounds. Industrial already manufactures nylon staple fiber at its Covington plant.

Field Trip Held

Thirty members of American Association for Textile Technology participated on May 23 in the field trip to the Research Center of the Quartermaster Corps at Natick, Mass., and a tour of inspection of Fabric Research Laboratories at Dedham, Mass. The trip was arranged by Jack J. Press, Research & Development Department, Naval Clothing Depot, Brooklyn, N. Y. William E. Ross, president of Rayflex Mfg. Co., Inc., was in charge of the arrangements during the trip.

Wash-and-Wear Interlining

Chicopee Manufacturing Corp. has developed an interlining said to be safe to use with chlorine. Intended for men's wash-and-wear shirt manufacturers, the Shapewell cotton fabric is now being introduced to the trade on the basis of tests recently made by an independent laboratory.

Shapewell is a cotton fabric treated with resins that prevent yellowing; maintain desired stiffness; resist shrinkage (1 percent residual), and ensure quick drying. The fabric is available in three weights, and three ranges of resiliency, all 38″ wide. Prices range from 26¢ to 36.5¢ per yard.

How silk is dyed today

Silk can be dyed with every major class of dyes to yield brilliant color effects

By Ralph M. Gutekunst

THE SILK DYER has the satisfaction of knowing that no textile fiber can be dyed in brighter, more lively colors and to every hue of the rainbow. It is this vividness of color, or in other instances subtlety of tone, combined with rich lustre and luxurious hand that make one think spontaneously of the queen of fibers.

The natural gum or sericin in the silk of most skein dye fabrics is thoroughly removed to attain the highest degree of lustre and the result is known as "bright" silk. Where the filling is covered, or even the warp in some constructions, the sericin is often retained but the thread is softened by chemical and mechanical processing known as "souple." The individual cocoon threads are opened to produce a lofty thread that imparts a heavier and fuller hand than when degummed silk is used. A variation of this process producing a softer thread is termed "mi-cuit" half-boil.

For certain constructions silk is yarn dyed without removing the sericin. The process is known as "gum dyeing." Colors so dyed will withstand crease resist finishes and can be dyed fast to cross-dyeing. A development in the last few years is the ability to gum dye silk in the original skeins as received from Japan instead of having it rereeled. For best results the silk should have a minimum number of hard gum spots. Laces or lease strings should be of sufficient strength and length to allow for some swelling of the skein in dyeing.

Currently some mills are taking advantage of the gum or natures sizing and are weaving dyed silk on a mass production basis. Combinations are endless, but filling of cotton and "flake" spun rayon have been very important.

Silk can be weighted with an insoluble tin salt to increase denier size and enhance luster. It was a popular misconception that weighting is removed in washing. This is not the case because all weighting is done before dyeing and would be removed in the hot dye liquors if it did not become part of the fiber. Weighting is not popular in the United States at present because of the low price of silk and the higher price of metallic tin. Federal Trade Commission rules require that any weighted silk be so labeled. The process is widely used in Europe where mills are permitted to use the "Pure Silk" label of the International Silk Association on fabrics weighted 70/80% over par. The advantages of supplying weighted silks woven at lower labor rates in competition with American mills are obvious. But it seems that this advantage is not sufficient—the domestic industry is now confronted with lower tariffs under GATT.

However based on thrown silk at $6.50 a pound there is a saving of over $1.75 a pound, when calculated purely on the weight basis, between silk weighted to 20/22 ounces and pure-dye. Weighted silk has more luster and is free of static electricity. Weighting also imparts an especially pleasing hand that cannot be duplicated with pure-dye. As with all good things, excessive weighting should be avoided.

Tests prove there is no loss of tensile strength when silk is subjected to temperatures of 320-350° for the short periods of time required for pressing. At the linen or highest setting of an iron, approximating 550°F., there is a loss of 10-20% in tensile strength and if a crease is pressed at that temperature the break will always occur at that point. Deodorants, anti perspirants and depilatories should be removed before a garment is pressed and some have a deleterious effect even without pressing.

A further development or extension is the use of this historic fiber in combination with the new synthetics. Since heat-treating is an important factor in processing the new yarns, another field of study has been opened. An evening could be spent on this subject alone, but the pressing temperatures mentioned above supply a basis of understanding. Since Dacron polyester fiber can be set in the 350° range no special problems are involved. The higher temperatures required for nylon tend to "yellow" the silk.

Most woven fabrics can be heat-set before dyeing or bleaching and the shade corrected, but at this time there is no answer to the problem presented when heat treating is required after dyeing. There is nothing newer—undoubtedly because there is nothing better, than the stick or skein method of degumming silk in the piece. This, with slack handling, often imparts the required stability when heat treating is not advisable.

Silk is distinctive in that it can be dyed with every major class of dyes and, therefore, dyeing the silk presents no problem when combined with other fibers.

(Continued on page 75)

Ralph M. Gutekunst

Mr. Gutekunst is vice president of Hellwig Dyeing Corp. He is also vice president of the Silk Dyers Association, and past treasurer of AATT. Mr. Gutekunst is a graduate of Philadelphia Textile School.

REPORT FROM JAPAN

Japan's mills look toward U.S. sales to dispose of growing inventories

By B. Mori

OSAKA— As a result of U. S. export curtailment plan now in effect—although spottily obeyed—inventories have come down and prices have firmed. Before the price rise took place, heavy export business was booked during first three months of this year. Now prices have firmed up further and export business has fallen off. In face of this situation, mills are chalking up highest monthly production records since war, under (temporary) encouragement of good prices and good volume of business in January-February-March. So the situation never reaches equilibrium and nervous mills and merchants find themselves facing another self-made "crisis"—a crisis induced by prosperity.

U. S. Market Held Crucial— This situation makes Japanese millmen anxious to maintain sales in the American market, and to avoid anything which would cause American or Japanese authorities to cut down on present volume of exports.

Meanwhile new orders from the U. S. are falling off. Some quarters predict that this year's shipments to the U. S. may not even reach the quota of 150 million yards. If mills and exporters here had not been restrained last fall from taking orders at the lower prices then prevailing, exports to the U. S. this year might have been over 200 million yards.

It is strongly indicated that the 1957 quota will also be 150 million yards. The people proposing this are well aware that it will bring new storms of protest from American competitors. However, they now have plently of time to work out a more reasonable distribution of the quota among different types of goods, to avoid focusing the impact on any limited areas of American cotton industry.

Silk Crop in Doubt— Unseasonally cold wet weather followed the late frost to harass Japan's silkworm raisers. As a result, speculators supplemented trade buying and pushed prices to highest level in almost a year. Then the tide receded.

Local weavers who manufacture goods for the U. S. market have been among best buyers, focusing attention on the increase in this business. Some American mills have complained that Japan is taking an increasing share of plain yarn-dyed fabric business (such as failles) in addition to volume trade in staple plain goods of cheaper types. It is thought here that the big forte for American mills may turn out to be fabrics combining natural and man-made yarns, while Japanses mills dig more and more deeply into staple yarn-dyed goods market.

Wanted: Acrylic Knitting Yarns—Exports of wool sweaters to U. S. is one of Japan's fastest-growing textile items. Manufacturers and exporters would like to get a piece of big U. S. synthetic sweater business. This may generate more pressure for Japanses Government to permit exports of acrylic fibers in bond for spinning and knitting.

Latest News Notes—The Diet has passed, with minor changes, law giving MITI power to regulate size of various textile producing industries (reported on this page in January). The Government now has authority to order curtailment of production, forbid mill expansions, and tell mills what products they may make, if such instructions are deemed necessary for good of national economy. . . . The Foreign Investment Council has given approval to contract between Celanese Corp. of America and Mitsubishi Rayon Co., Ltd. (to make acetate in a jointly-owned plant); and to agreement whereby American Cyanamid Co. licenses Sumitomo Chemical Industry Co., Ltd., to manufacture Creslan acrylic fiber. . . . Production of rayon pulp in first quarter reached new postwar of 80,200 metric tons, a gain of 10 per cent over first quarter of 1955. . . . Production of dyestuffs in first quarter was 5,300 metric tons, a gain of 15 per cent.

Tire Cord

(Continued from page 33)

reached 50 million pounds, as it did, if tire producers had not made substantial progress in solving the technical problems of nylon tire construction.

These gains for nylon were recorded despite increased advertising of rayon tire cord by the American Rayon Institute, and an increase in tenacity for rayon from 3.6 to 4.0 grams per denier with no change in price.

The third stage of penetration in this market began when nylon tire yarn prices were reduced from $1.48 to $1.30 per pound this past spring. Although a decision to reduce the price of apparel deniers may have been an influence, the fact remains that production of nylon tire cord had declined slightly from the peak reached in the second quarter of 1955.

It can be estimated, therefore, that the 1958 target for nylon tire yarn will be out of reach, *unless*

1. Shipments for 1956 as a whole are increased by at least 15 million pounds; and
2. Nylon tires are adopted as original equipment on one or more of the mass-produced cars, at the latest for 1958 models, and preferably for 1957 models.

Tire Cord Economics

So many variables are involved in tire construction, and in tire performance evaluation, that tire yarn cost evaluations are difficult. It is possible, however, to indicate some of the relative cost factors which influence the competitive position of nylon and rayon in different types of tires.

A given length of 840 denier nylon tire yarn will weigh approximately half as much as the same length of 1650 denier rayon tire yarn. It cannot be assumed, however, that a 6-ply tire, for example, will use only half as many pounds of nylon as of rayon. Nylon cord will have a smaller diameter, more ends can be used if this is necessary, and the number of ends used in a nylon tire fabric will substantially influence its weight.

The commonly accepted figure is that about 6/10 of a pound of nylon, or a little more, will be the equivalent of a pound of rayon in the tire. The following table shows the origin of this figure, and also indicates that there will be a substantial variation depending on whether the tire is to run hot and dry as it does on trucks, passenger cars and buses, or whether it is to run cool and wet, as it does frequently on tractors and other off-the-road equipment. (See Table left hand column of page 66.)

This calculation shows, for nylon tire yarn at $1.30, the price at which rayon tire yarn could sell in order that the rayon tire have approximately the *same yarn cost,* and approximately the same tensile strength, as

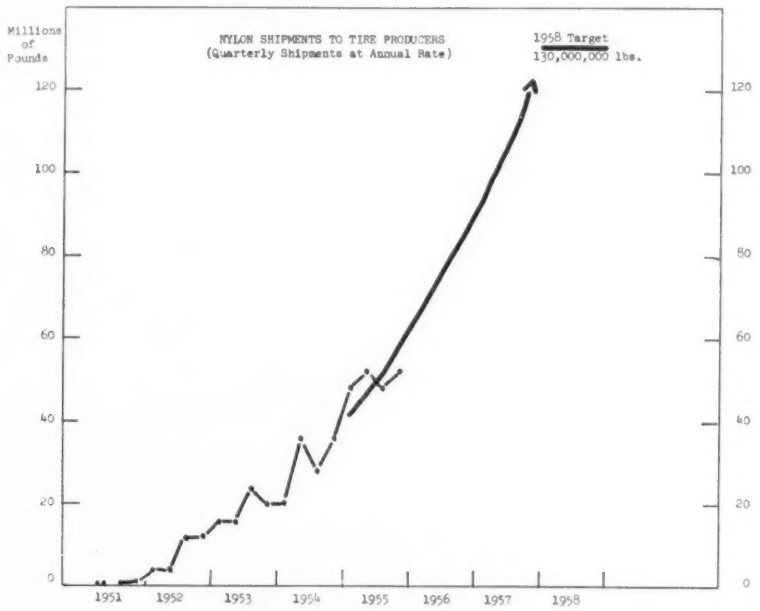


Chart 2

Nylon Tire Targets

It is estimated that the capacity available for nylon tire yarn production by the end of 1957 will be almost 130 million pounds. The accompanying chart shows the trend of quarterly nylon tire yarn shipments, with a horizontal bar in 1958 at the 130 million pound level. If this estimate of capacity is reasonably accurate, this is the amount of nylon tire yarn that producers will want to sell to the tire industry during 1958.

It is plain from the chart that this goal implies an exceedingly rapid increase in nylon tire yarn shipments during the remainder of 1956 and 1957. The problem for nylon is further exaggerated by the fact that:

a) total tire production this year will probably decline by about 10% from the high 1955 level; and
b) nylon tire yarn shipments during the first quarter of this year showed only a minor gain from last year's level.

PRICE OF RAYON TIRE YARN
REQUIRED TO GIVE SAME TIRE CORD COST AND
SAME TENSILE STRENGTH AS NYLON TIRE YARN

	Nylon 840 Denier	Rayon 1650 Denier
Yarn Tenacity (grams per denier)	7.8	4.35**
Pounds per unit of length ratio	.509	1.000
Tensile strength, tire cord (ratio of pounds of nylon required to give same tensile strength as one pound of rayon cord)		
Wet	.431	1.000
Bone-dry, at 100°C.	.625	1.000
Price per pound of rayon tire yarn required to provide same tire cord cost and tensile strength as nylon tire yarn*		
Wet	$1.30	$ .56
Bone-dry, at 100°C.	$1.30	$ .81

* No allowance is made for differences in cost in processing yarn into cord or tire fabric, which are greater for nylon than rayon; or for rubber used, which is less for nylon than for rayon; for the effect on nylon tenacity of hot-stretching or for tire performance characteristics other than tensile strength.
** Rayons of higher tenacity are available.

the nylon tire. If these were the only factors to be considered, then 81 cent rayon would be competitive with nylon at $1.30, in tires *which are to run hot and dry*, as on most passenger cars, trucks and buses. Since super high strength rayon tire yarn is now quoted at 54 cents a pound, by one producer and at 61 cents by the others, rayon would appear to retain a substantial competitive advantage. But, although tensile strength is a *necessary* property in any type of tire, it is not the only property a tire must have. And, in case the tensile strengths of a nylon and rayon tire are about equal, it is these other properties that will influence the tire manufacturer and the consumer.

Current Situation and Prospects

1. The position of nylon at the moment is about as follows:

Aircraft tires	Practically 100% nylon.
Off-the-road equipment	Nylon dominates.
Truck tires	Nylon accounted for about 20 percent of truck tires last year. Use in 14:00 tires and bigger has begun to increase more rapidly.

(Continued on page 67)

FACTORS INFLUENCING THE USE OF NYLON AND RAYON TIRE YARNS

Property	Comparison	Significance
Impact Resistance	Nylon has a superiority in this respect, because of its greater elasticity.	Essential for military and civilian aircraft. Reduces blow-out risk in passenger, truck and bus tires. Helps increase possible number of recappings.
Tensile Strength	Nylon superior (see previous table).	Smaller cord diameter and ply gauges allow thinner tire, which generates less heat. This tends to improve fatigue resistance and reduce heat aging deterioration. Allows reduction in number of plys if tire growth can be prevented.
Tire Growth	Nylon's greater elasticity makes it inferior in this respect, unless it is subject to hot-stretching. It is believed that hot-stretching techniques are near a point where nylon will soon reach the rayon norm in terms of growth, while maintaining superior impact resistance.	Growth in height of tire is a disadvantage when some, but not all tires on a vehicle, are replaced. Growth in arc width causes cracked treads, and is critical in truck tires. Hot-stretching, to reduce growth, requires costly equipment, adds to the cost of processing nylon yarn into tire fabric and may influence the tensile strength of the cord. However, the increase in cost is partly offset by the fact that less rubber is required. Most tire manufacturers have already invested heavily in hot-stretching equipment. Use of wire cord breakers is another method of limiting arc-width.
Low Moisture Pick-Up	Nylon superior, and retains more of its tensile strength when wet.	Advantage substantial for off-the-road equipment, particularly where used in marshy areas. Low moisture pick-up also reduces tire fabric deterioration when rubber becomes cracked or cut, thus decreasing tire failures and increasing recap potentials.
Sales Appeal	Advertising and promotion of nylon are judged to have had a substantial result in terms of sales appeal.	Sales appeal more important for consumer than industrial sales. Over the long-term, construction of interstate toll roads, on which traffic moves at high speed, will increase the sales appeal of blow-out protection. Critical objective of nylon tire yarn merchandising will be to gain acceptance as original equipment on one or more mass production cars.

Tire Cord (Continued from page 66)

Passenger tires. Nylon has less than 10 percent of the market.

2. Further gains for nylon in truck and passenger car replacement tires can be expected, but these will be too slow to meet the goals outlined above. *Acceptance of nylon tires for original equipment is essential.*

3. The quality of rayon tires is generally high. Except for certain specialized tire uses, safety and other requirements can be met satisfactorily by rayon tire cord, and rayon has a price advantage in passenger car tires when tensile strengths are equalized. This is particularly true of type 272 rayon which has a tenacity of 5.1 grams per denier and sells as 64 cents.

(Nylon producers are counting on a larger number of recappings to more than offset the higher original price of nylon truck tires.)

However, every price reduction tends to reduce the absolute size of the price differential between nylon and rayon tires, and its effect on the potential buyer. Furthermore, nylon and rayon tires having the same tensile strength will differ in other respects, and the objective of the nylon advertising program is to justify a price differential on the basis of these other factors.

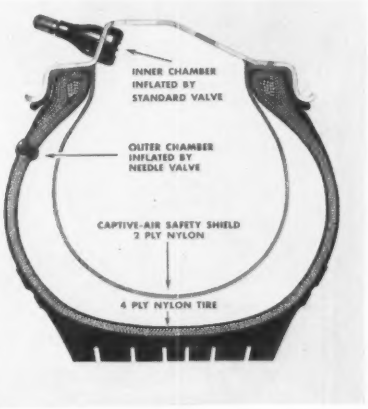
4. Further gains for nylon, as shown below, would be consistent with the goals outlined above. Allowance has been made for a 10 percent decline in tire production in 1956, a recovery to the 1955 level in 1957, and 1958, and displacement of rayon by nylon in the ratio of 1.6 pounds to 1.

ESTIMATED TIRE CORD PRODUCTION
if nylon goals are met
(millions of pounds)

	1955	1956	1957	1958
Nylon	50	65	100	130
Rayon	406	333	326	278
Total	456	398	426	408

Nylon in New Safety Tire

Nylon cord is used in a new safety tire introduced last month by Goodyear Tire & Rubber Co. Tradenamed "Captive-Air," the safety feature of the new tire is provided by an inner tire of 2 ply nylon with a conventional tire of 4 ply nylon on the outside. According to Goodyear, if the outer tire is punctured the inner tire is sufficient to enable an auto to operate for as far as 240 miles.


INNER CHAMBER INFLATED BY STANDARD VALVE
OUTER CHAMBER INFLATED BY NEEDLE VALVE
CAPTIVE-AIR SAFETY SHIELD 2 PLY NYLON
4 PLY NYLON TIRE

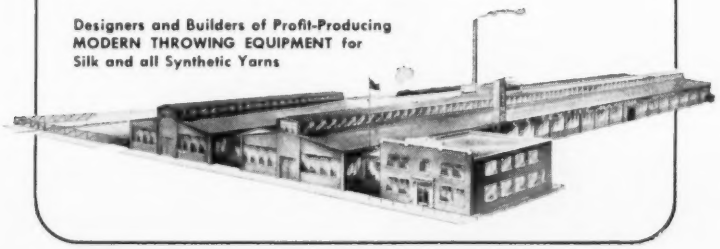
Goodyear's new "Captive-Air" safety tire

there's an
U.S. ACME
for every
Throwing Requirement

You name it—stretch yarns or bulk yarns, glass or metallic yarns, special process yarns, etc. . . . U. S. Textile is at your service with machines and know-how!

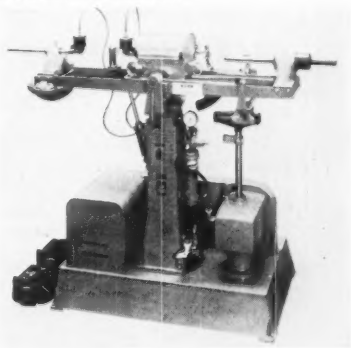
U. S. TEXTILE MACHINE COMPANY
SCRANTON 8, PENNA., U. S. A.

Designers and Builders of Profit-Producing MODERN THROWING EQUIPMENT for Silk and all Synthetic Yarns



Tensile Tester for Tire Cords

Scott Testers, Inc., Providence, R. I., are announcing an improved method of tensile testing for tire cords by means of their Spruance Clamps and auxiliary equipment for a semi-automatic testing cycle. The clamps are said to be pneumatically actuated and to have these advantages: automatic adjustment compensates for varying cord diameters; uniform pressure upon cord assures no crushing; twist is not disturbed; uniform tension is assured.



New MACHINERY

New EQUIPMENT

New spinning frame produces large packages of knotless coarse yarns

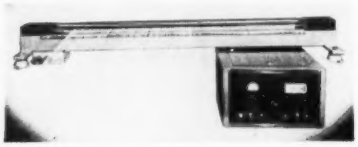
The new Monarch spinning frame now available from Whitin Machine Works, Whitinsville, Mass., is capable of producing very large packages of knotless coarse yarns from .5's—8's (cotton count) directly from sliver, the manufacturer reports.

The frame has a massive chassis and is equipped with Whitin's two-apron roving drafting arrangement with top arm suspension and weighting, 7" gauge, up to 5½" rings, 11" traverse. Either floor or ceiling creels can be used.

Whitin states that the new frame is ideally suited for economical production of quality tufted carpet and other coarse yarns from wool, man-made fibers and blends with fiber lengths from 3" to 9". The following are further details of the frame and its performance: Yarn on bobbin—up to 3.5+ pounds; draft range 4—50; accommodates sliver up to 100+ gr./yd.; spindle speeds 2800—5000 rpm; spinning type cradles; Quik-Set ratching for instantaneous change of roll setting; pulleys for four spindle drive.

Automatic yarn inspector

An automatic yarn inspector is available from Lindly & Co., Inc. It is a variable sensitivity optical and electronic device capable of measuring variations in yarn diameter on a single or multiple end basis. The device is designed primarily to perform as a yarn inspector during some productive operation, eliminating inspection as a separate job.



The yarn inspector can be used in statistical quality control or in 100% inspection and repair. The standard unit contains both a counter and a stop motion which can be used interchangeably or simultaneously.

On a single end basis yarn discrepancies both above and below the norm can be determined. In multi-end application only variations above the average diameter will trigger the unit. However, in the detection of broken filaments in continuous multi-filament yarns individual broken filaments can be positively detected on a multi-end basis, such as in warping, irrespective of whether the broken filament has been compacted into a so-called puffball or not.

For further information write the editors.

NON-FLUID OIL
TRADE MARK REGISTERED

USED IN 7 OUT OF 10 SPINNING ROOMS

In all of your spinning operations, smooth dependable lubrication is essential for quality yarn production. This means that you need NON-FLUID OIL, the lubricant that stays in the bearings, regardless of speed and temperature.

Ordinary oils creep or spatter out of roll necks and result in high oil and application costs, plus rotted roll covers and stained yarn. NON-FLUID OIL *stays* in roll necks—lubricates until entirely consumed—hence saves on oil and application expense—prevents rotted roll covers—avoids stained yarns.

For positive proof, send for free testing sample . . . no obligation.

NEW YORK & NEW JERSEY LUBRICANT COMPANY
292 MADISON AVE., NEW YORK 17, N. Y.
WORKS: NEWARK, N. J.
So. Dist. Mgr.: Lewis W. Thomason, Jr. Charlotte, N. C.

1898 60 YEARS 1956 NON-FLUID OIL SERVICE TO INDUSTRY

WAREHOUSES
Birmingham, Ala. Atlanta, Ga. Columbus, Ga. Charlotte, N. C.
Greenville, S. C. Chicago, Ill. Springfield, Mass.
Greensboro, N. C. Detroit, Mich. Providence, R. I. St. Louis, Mo.

NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture. So-called grease imitations of NON-FLUID OIL often prove dangerous and costly to use.

Lamicoid for textile uses

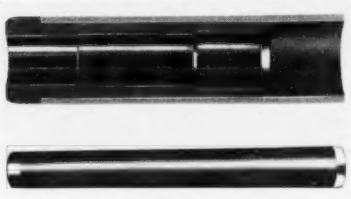
Lamicoid, a trade name for laminated plastic made by Mica Insulator Co., is being introduced to the textile industry for such uses as bobbins, spools, lap rolls, pirn and spool caps, picking fingers and sliver rolls. The technical staff of the Titania Division of American Lava Corp., has undertaken to give assistance to the textile industry in the selection and utilization of Lamicoid products.

Lamicoid materials are made up of specially selected papers and cloths of all types, impregnated with synthetic resins and molded under heat and pressure into machinable tubes, rods and sheets. Among the advantages of Lamicoid, according to American Lava, are great strength, dimensional accuracy and uniformity as well as stability under changing temperatures and humidities.

Lamicoid sales and services will be handled by American Lava in all areas of the United States except the far west. Standard shapes will be stocked for prompt shipment to customers from Chattanooga, Tenn.

Plastic-Welded Bobbin Offered

American Paper Tube Co., Woonsocket, R. I., is offering a bobbin for the Saco-Lowell Gwaltney SG-1 spinning frame with a precision-molded thermosetting plastic tip and seat section that is said to be able to withstand hardest mill usage and permanent precision fit.

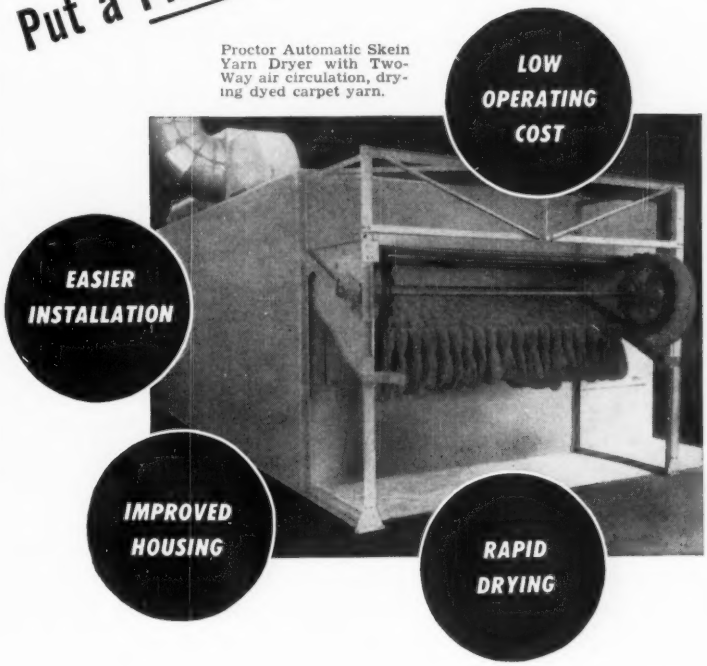


The seat section and tip are fused together with the synthetic tube by the company's patented "plasti-weld". The homogeneous composition of the tube is said to make it free from warping, splitting or chipping.

For further information write the editors.

Put a PROFIT in your yarn drying!

Proctor Automatic Skein Yarn Dryer with Two-Way air circulation, drying dyed carpet yarn.



PROCTOR DRYERS for Skein Yarn

Regardless of your output, there is a Proctor Yarn Dryer with the right capacity to make your drying profitable. Truck Dryers for skeins and cakes, or Automatic Dryers for continuous operation, both feature controlled air circulation to provide the *greatest drying uniformity obtainable.* Cotton, wool, silk, or synthetics can be dried at fastest possible rates—show substantial savings in time, labor, and steam requirements. And, as with all Proctor equipment, you can depend on performance guaranteed in terms of the finished product produced. Investigate these profit opportunities now—write today for latest information bulletins.

WRITE FOR DETAILS. PROCTOR & SCHWARTZ EQUIPMENT FOR THE TEXTILE FIELD

AUTOMATIC BLENDING SYSTEMS • WEIGHING FEEDS • PICKERS • SHREDDERS • BALE BREAKERS • SYNTHETIC CARDS • GARNETTS • DRYERS FOR FIBROUS MATERIAL • YARN DRYERS • HOT AIR SLASHER DRYERS • CLOTH CARBONIZERS • ROLLER DRYERS AND CURERS • LOOP AGERS FOR PRINT GOODS • TENTER HOUSINGS • OPEN-WIDTH BLEACH SYSTEMS FOR WOVEN FABRICS • MULTIPASS AIRLAY DRYERS • NYLON SETTING EQUIPMENT • CON-O-MATIC WASHERS • CONTINUOUS BLEACH SYSTEMS FOR PRODUCING TUBULAR KNITS • EQUIPMENT FOR "REDMANIZED"® SHRUNK-TO-FIT FABRICS • CARPET DRYERS

Proctor

PROCTOR & SCHWARTZ, Inc.

Manufacturers of Textile Machinery and Industrial Drying Equipment
Philadelphia 20, Pennsylvania

U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarns, staple and tow as reported by the producers in June, 1956. All prices are given as subject to change without notice.

RAYON FILAMENT YARN

American Bemberg

Current Prices

Effective February 15, 1956

Regular Production Reel Spun Yarn

Den/Fil	No Twist Skeins	Twisted* Skeins & Cones	8½ Turns	High Twist Skeins & Cones 12 or 15 Turns		18 Turns
40/30	$1.49	$1.95	....	....	....	$2.08
50/36	1.24	1.50	....	....	....	1.72
65/45	1.14	1.30	....	$1.53	....	1.58
75/60**	1.04	1.18	....	1.41	$1.41	1.49
100/74**	.95	1.08	....	1.33	1.33	1.44
125/60	.94	1.05	$1.09	....	....	....
150/120	.93	1.02	1.12	1.27	....	....
300/225	....	.95	....	....	1.08	....

* Twisted includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.
** Spun Dyed Black 15¢ per lb. extra.

"44" HH Spool Spun Yarn

Den/Fil	No Twist Tubes	No Twist Beams	5 Turn Beams	5 Turn Cones	12 Turn Beams	12 Turn Skeins & Cones	15 Turn Skeins & Cones
40/30	$1.35	$1.35	....	....	....	....	....
50/36	1.05	1.05	....	....	....	....	....
65/45	1.05	....	....	....	....	$1.42	....
75/45**	.97	.97	$1.08	$1.08	$1.31	1.31	$1.39
75/54	.97	.97	1.08	1.08	....	....	....
100/60**	.89	.89	1.03	1.03	1.23	1.23	1.23
125/60	.84	.84	.99	.99	....	....	....
150/90***	.77	.77	.81	.81	....	1.15	1.15
150/120	.81	....	.93	....	....	....	....

** Bemberg Solution Dyed yarns are spun in 75/45 and 100/60 only. Black 15¢ per lb. extra; all other colors 35¢ per lb. extra.
*** Spun Dyed Black 15¢ per lb. extra.

Nub-Lite (Short Nubbi)

Code	Den/Fil	2½ Twist Cones	5 Twist Cones
1516	150/90	....	$1.35
1517*	150/90	....	1.35
2000	200/120	....	.96
2025**	200/120	....	.96
3000	300/180	$1.00	....
4000	400/224	1.00	....
6000	600/360	.98	....
8000	800/450	.98	....

* Code 1517 can be run in warp or filling.
** Code 2025-Softer than 2000.

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight allowed to Memphis, Tennessee. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold f.o.b. delivery point.

American Enka Corp.

Current Prices

Standard Quality Yarns

Standard Quality Rayon Yarns

A. Natural:

Den/Fil.	Luster	Turns		Weaving Cones	Skeins Beams	Long	Short	Cakes	3 Lb. Knotless Cakes	Knitting Cones
50/18	E	5	S	....	....	....	....	....	....	1.51
75/10	B	3	S&Z	....	....	....	....	1.03	....	....
75/18	E	4	S	....	....	....	....	....	....	1.17
75/30	B	4	S&Z	1.12	1.12	....	....	1.03	....	1.12
75/30	B	8	S	1.17	....	....	1.32	....	....	1.17
75/45	P,E	2.5, 4, 5	S&Z	1.12	1.12	1.18	....	1.03	....	1.12
75/60	P	3	Z	1.17	....	....	....	....	....	....
100/14	B	3	S&Z	....	....	....	....	.91	....	....
100/40	B,E	12	S	....	....	....	....	....	....	1.22
100/40	B,P,E	4, 5	S&Z	....	....	....	....	....	.91	.99
100/40,60	B,P	2.5	S&Z	.99	.99	1.03	1.07	....	.91	.99
100/60	E	2.5	S	1.01	1.01	....	....	....	.93	....
125/40	E	3	Z	....	....	....	....	....	....	.91
150/40	B,P,E	2.1,3	S&Z	.86	.86	.89	.94	.81	.81	.85
150/40	B,E	5	S	.86	....	.89	.94	....	....	....
150/40	B,E	8	S&Z	.92	....	.95	1.00	....	....	....
150/90	B,E	2.1	S&Z	.87	.87	....	....	.82	....	....
200/40	P	3	Z	....	....	....	....	....	....	.79
250/60	P,E	2.4	Z	....	....	....	....	....	....	.72
300/50	B,E	3	S	.70	.70	....	....	....	....	....
300/60	B,P,E	2.1	S&Z	.70	.70	....	.73	.68	.68	.70
300/60	B	3.5	S	.70	.70	....	....	.68	....	....
300/60	B	4.3	S	.73	.73	....	....	.71	....	....
300/60	B	7	S	.80	....	....	....	....	....	....
300/40, 120 H.T.	B	2.5, 3, 4	S	.72	.72	....	....	....	....	....
450/80	B	3	S	.67	.67	....	....	.65	.65	....
600/80,120	B,E	3	S	.66	.66	....	....	.64	.64	....
900/120	B	3.4	S	.65	....	....	....	.63	.63	....
900/120 H.T.	B	3.6	S	.67	....	....	....	.65	.65	....

B—Briglo, P—Periglo (semi-dull), E—Englo (dull), H.T.—High Tenacity.
B. Tinted Yarns: 5¢ additional per lb.

"Jetspun" Colored Yarns

Den/Fil.	Tenacity	Turns	Weaving Cones	Beams	Cakes	Colors
100/40	Regular	2.5S	1.34	1.34	....	All
100/60	Regular	4 S&Z	....	....	1.26	All
150/40	Regular	2.1S	1.21	1.21	....	All
300/40	Regular	3.4S	1.05	....	....	All
450/80	Regular	3.0S	1.02	....	....	All
600/80	Regular	3.4S	1.01	....	....	All
900/120	Regular	3.4S	1.00	....	....	All
300/40	High	3.4S	1.07	....	....	All
600/80	High	3.4S	1.03	....	....	All
900/120	High	3.4S	1.02	1.02	....	All

Terms: Net 30 days F.O.B. Enka, North Carolina or Lowland, Tennessee. Minimum common carrier transportation charges prepaid to first destination on or east of the Mississippi River.

American Viscose Corp.

Effective January 23, 1956

Graded Yarns

Denier	Filament	Type	Short Skeins	Long Skeins	All Cones Beams Tubes	Cakes
50	20	Bright & Dull	$	$1.54	$1.51	$1.40
60	10	Bright	....	....	1.36	1.25
75	10-30	Bright	1.19	1.15	1.12	1.03
75	30	Dull	....	....	1.12	1.03
100	14-40	Bright	1.07	1.02	.99	.91
100	60	Dull	....	....	1.01	.93
150	24-40-60	Bright & Semi-Dull	.94	.89	.86	.81
150	40	Dull	....	....	.86	.81
150	90	Dull	....	....	.87	.82
200	10-44	Bright	.87	.32	.79	.75
250	60	Semi-Dull & Dull	.79	.75	.72	.70
300	44	Bright & Dull	.76	.73	.70	.68
300	234	Dull	....	....	.72	.70
450	100	Bright	....	.69	.67	.65
600	100	Bright	....	.68	.66	.64
900	60-100-150	Bright	....	.67	.65	.63
1200	75	Bright	....	.64	.62	....
2700	150	Bright	....	.67	.65	....

Extra Turns Per Inch

75	30	Bright	6-Turns	$1.31	$1.27	$1.24	$ ....
100	40	Bright	6-Turns	1.19	1.14	1.11	1.03
150	40	Bright	6-Turns	1.04	.99	.96	.91
300	15	Bright	5-Turns	....	....	.75	....
300	44	Bright	6-Turns	....	.83	.80	.78
600	30	Bright	5 Turns	....	.73	.71	.69

Rayflex Yarns

150	60	Rayflex	$	$	$ .89	$ .84
300	120	Rayflex	....	....	.72	.70
450	120	Rayflex	....	....	.69	.67
600	234	Rayflex	....	....	.68	.66
900	350	Rayflex	....	.69	.67	.65

Thick and Thin Yarns

150	40	Bright & Dull	....	....	1.10	....
150	90	Bright & Dull	....	....	1.10	....
200	75	Bright & Dull	....	....	1.02	....
300	120	Bright & Dull	....	....	.92	....
450	100	Bright & Dull	....	....	.89	....
490	120	Bright & Dull	....	....	.92	....
900	350	Dull	....	....	.97	....
920	120	Bright & Dull	....	....	.97	....

Colorspun Yarns

Currently producing 150/30 and 300/60 regular tenacity and 900/234 Rayflex at premiums of $.35 per pound.

Textile News Briefs

1957 Knitting Arts Show

The 43rd Knitting Arts Exhibition will be held in Atlantic City from April 29th to May 3rd, 1957. The show is devoted to the knitting industry in all its branches. For further information about the exhibit write to: Albert C. Rau, Manager, 332 Park Square Building, Boston, Mass.

Non-Fluid Oil 60 Years Old

N. Y. & N. J. Lubricant Co. has announced that it has celebrated the 60th anniversary of its introduction of Non-Fluid Oil on the market. According to the company, this new concept in lubrication, at first viewed with skepticism, is now accepted throughout industry as being synonymous with fine quality.

Helanca Trademark

Heberlein Patent Corp. recently stopped six companies from using the registered Helanca stretch yarn name on products made from other yarns. It is reported that all these companies admitted the misuse of the Helanca mark and have agreed to stop such misuse, and in the future to use the Helanca mark on products made of Helanca yarn only.

W. C. Howe

W. C. Howe has been elected director of Crompton & Knowles, Canada, Ltd. Allan F. Ballantyne has been appointed secretary of the company.

The Chemstrand Corp. has announced the election of Edward A. O'Neal, Jr., as president to fill the vacancy created by the resignation of Henry H. Bitler, who returns to American Viscose Corp. Mr. O'Neal has resigned as vice president and director of Monsanto Chemical Co., where he began his career with the Swann Corp., Anniston, Ala., later acquired by Monsanto.

Chemstrand also announced that Robert M. Seibert has joined the company as a promotion coordinator, and John E. Hooke, as an Acrilan sales specialist.

(Continued on page 73)

Bright

assure added sales appeal with Globe-Dyed SYNTHETIC YARNS

Clear

Colors

For fine hand, and superior knitting and weaving qualities, you can rely on Globe package-dyed ORLON – DACRON – NYLON – ACRILAN.

Globe does package dyeing on tubes, skein and warp dyeing and bleaching, warp mercerizing and sizing.

Yarns we process include cotton, rayon, worsted, nylon, linen, blend and novelty yarns. Also Acrilan – Dacron – Orlon.

Globe DYE WORKS CO.

1865 • 1956

4500 WORTH STREET, PHILADELPHIA 24, PA.

JEfferson 5-3301

Viscose Filament Yarns

The following deposit charges are made on invoices:

Metal Section Beams	$170.00 each
Wooden Section Beams	55.00 each
Wooden Section Beam Crates	30.00 each
Metal Section Beam Racks	75.00 each
Metal Tricot Spools—14" flange	30.00 each
21" flange	60.00 each
32" flange	150.00 each
Metal Tricot Spool Racks—14" flange	135.00 each
21" flange	100.00 each
32" flange	75.00 each
Wooden Tricot Spool Crates	20.00 each
Cloth Cake Covers	.05 each

Same to be credited upon return in good condition—freight collect.
Terms: Net 30 days.

Celanese Corp. of America

Current Prices
Effective January 24, 1956

Den.	Fil.	Twist	Beams	Cones	Cakes	Non Shrunk Tubes
#49 and #14 Production						
75/30/3		Bright		$1.06	$.98	....
100/40/3		Bright	$.93	.91	.86	....
100/40/5		Bright	....	.97	.92	....
100/60/3		Bright	....	.92	.87	....
125/40/2Z		Bright	.89	.87	....	....
150/40/3		Bright	.84	.80	.75	....
150/40/2Z		Bright	.82	....	....	....
150/40/5		Bright	....	.86	.81	....
150/40/8		Bright	....	.92	.87	....
150/40/0		Bright (Non Shrunk)	....	.66	....	....
300/50/3		Bright	.69	.68	.66	....
300/50/0		Bright (Non Shrunk)	....	.60	....	....
#20 Production						
150/40/3		Bright	.82	.78	.73	$.72
150/40/0		Bright (Non Shrunk)	....	.66	....	....
150/40/2Z		Bright	.80	....	....	....
300/50/3		Bright	.69	.68	.66	....
300/50/0		Bright (Non Shrunk)	....	.60	....	....
#20 Production						
100/40/3		Dull	....	.91	.86	....
100/60/2Z		Dull	.95	....	....	....
100/60/0		Dull	....	.88	....	....
100/60/5		Dull	.99	.97	.92	....
150/40/3		Dull	.82	.78	.73	.72
150/40/0		Dull (Non Shrunk)	....	.66	....	....
150/90/3		Dull	....	.85	.80	....
250/60/0		Dull (Non Shrunk)	....	.64	....	....
250/60/3		Dull	....	.72	....	.67
#52 Thick & Thin Rayon						
150/60/3		Bright	....	1.10	....	....
450/120/3		Bright	....	.89	....	....

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.
Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices
Effective with orders issued April 2, 1956

Bright and Dull

Den.	Fil.	Turns/Inch Up to		(A) Cones, Beams, Tubes	Skeins	Cakes
40	20	3	Textile "Cordura"	$1.90	1.90	$1.85
50	20	3		1.58	1.58	....
50	20	3	Textile "Cordura"	1.60	1.60	1.55
50	35	3	Textile "Cordura"	1.65	1.65	1.60
75	10	3		1.12	1.15	1.03
75	15	3		1.12	1.15	1.03
75	30	3		1.12	1.15	1.03
100	15	3		.99	1.02	.91
100	40	3		.99	1.02	.91
100	60	3	Bright	.99	1.02	.91
100	60	3	Dull	1.01	1.04	.93
125	50	3		.91	.93	.85
150	40	3		.86	.87	.81
150	60	3		.86	....	....
150	60	3	Textile "Cordura"	.87	.88	.82
150	90	3	Dull	.87	.88	.82
150	100	3	Dull	.87	.88	.82
200	35	3		.79	.81	.75
300	20	3		.70	.73	.68
300	50	3.5		.70	.73	.68
300	120	3	Textile "Cordura"	.71	.74	.69
450	72	3		.67	.69	.65
600	96	3		.66	.68	.64
600	240	3	Textile "Cordura"	.67	.69	.65
[illegible]	50	3		.65	.67	.63
900	144	3		.65	.67	.63
1165	480	3	Textile "Cordura"	.65	.65	.62
1800	100	3		.65	....	....
2700	150	3		.65	....	....
5400	300	3		.72	....	....

Thick and Thin

150	90	3	#7	1.10	1.11	1.10
150	90	3	#19	1.10	1.11	1.10
200	80	3	#7	1.02	1.03	1.02
200	90	3	#19	1.02	1.03	1.02
450	100	3	#7	.89	.90	.89
1100	240	3	#50	1.32	....	1.32
2200	480	3	#50	1.14	....	1.14

Fiber E

300	50	2½	.88
900	50	2½	.83
900	90	2½	.83
2700	150	2½	.88
2700	270	2½	.88
5400	540	2½	.88

(A) 2¢/lb. additional for cones less than 3# and tubes less than 2#.
Terms: Net 30 days.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Industrial Rayon Corp.

Effective January 27, 1956

Denier	Filament	Turns per In.	Type	2.8 Lb. Cones	4.4 Lb. Cones	Beams	2.2 Lb. Tubes	4.4 Lb. Tubes
100	40	2.5 "S"	Bright	.99	....	.99	....	....
150	40	2.5 "S"	Bright	.86	....	.86	....	....
150	40	2.5 "S"	Luster #4	.86	....	.86	....	....
150	40	2.5 "S"	Bright intermediate strength	.87	....	....	....	....
200	20	2.5 "S"	Bright	.79	....	....	....	....
200	40	2.5 "S"	Bright	.79	....	....	....	....
300	44	2.5 "S"	Bright	.70	....	.70	....	....
300	80	2.5 "S"	Bright	.70	....	.70	....	....
300	80	2.5 "S"	Luster #4	.70	....	.70	....	....
300	80	2.5 "S"	Bright extra strong	.72	....	.72	....	....
450	60	2.0 "S"	Bright	....	.67	.67	....	....
600	90	1.5 "S"	Bright	....	.66	.66	.66	.66
900	50	2.0 "S"	Bright	....	.65	.65	.65	.65
900	150	1.5 "S"	Bright	....	.65	.65	.65	.65

Luster #4 is semi-dull.
Standard skein lengths at 2,100 yards for 900 denier, 3,200 yards for 600 denier, 4,400 yards for 450 denier, and 6,500 yards for 300 denier —all at 2¢ per pound over cone prices.
900 denier 6 turns—Plus 8¢ for cones.
Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points east of the Mississippi River.

North American Rayon Corp.

Current Prices

First Quality Yarns	Den/Fil	Twist	Cones: Knitting*, Jacquard and Velvet Cones	Cones: No Twist Knitting Cones	Cones: Beams, Tubes** and Weaving Cones	Untreated Cakes
	75/30	3.5			$1.12	$1.03
	75/30	7			1.25	
	75/30	15			1.32	
Normal	75/30	20			1.35	
Strength Yarns	100/40/60 Brt.	3.5			.99	.91
NARCO	100/40/60	12			1.17	
	125/52	3	$.91		.91	.85
	125/52	10			1.08	
	125/60	3			.92	
	135/52	3			.90	
	150/42	3	.85		.86	.81
	150/42	0		$.66		
	150/60	3			.86	
	150/75	3			.86	
	300/75	3	.70		.70	
	300/75	0		.60		
	300/75	6			.80	
	600/98	3	.66		.66	
	900/46	2.5	.65		.65	
	1800/92	2.5	.65		.65	
Semi-High Strength Yarns Hi-NARCO	300/75	3			.71	
	300/75 Brt.	6			.81	

* Oiled Cones .01 per pound extra for Graded Yarns only.
** 1 lb. tubes $.02 per pound extra for Graded Yarns only.
Terms: Net 30 days f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates if sold f.o.b. delivery point.

RAYON HIGH TENACITY YARN and FABRIC

American Enka Corp.

Effective January 26, 1956

Tempra (High Tenacity)

Denier	Elongation	Beams & Cones
1100/480	Low	$.62
1230/480	High	.62
1650/720	Low	.58
1820/720	High	.58
2200/960	High & Low	.58

Suprenka (Extra High Tenacity)

1650/720	Low	.61
1900/720	High	.61
2200/960	Low	.60

* Beams Only.
Terms: Net 30 days, f.o.b. Enka, North Carolina, or Lowland Tennessee; minimum freight allowed to first destination east of the Mississippi River.

Geo. B. Lewis | Wm. J. McGlynn | N. J. MacGaffin, Jr. | B. J. Clark, Jr.

Du Pont Advertising Managers

The Du Pont Co. recently announced the appointment within its Textile Fibers Department of separate managers of advertising and promotion for each of its four end-use merchandising categories. According to Henry C. Froehling, director of the department's merchandising division, the new arrangement will make it possible to fully integrate the closely related efforts of advertising and promotion, including publicity.

The new managers are: George B. Lewis for womenswear; William J. McGlynn for home furnishings; N. J. MacGaffin, Jr., for menswear, and Bernard J. Clark, Jr., for industrial, general and export. They will be part of the textile fibers department's advertising and promotion section headed by Ellwood F. Altmaier, with Donald L. Hague serving as assistant manager. Charles H. Rutledge will continue as manager of product information.

Du Pont last month appointed Dr. Winfield W. Heckert to the newly created position of general director of technical sales, textile fibers department. In the same department, Edgar H. Bleckwell was made director of nylon manufacturing, and Emil O. Johnson, production manager for nylon.

American Viscose Corp. has announced the appointment of John A. Cushman as manager of the company's plant in Marcus Hook, Pa. Faust L. Bellegia will succeed Mr. Cushman as chief plant engineer in the Lewistown plant. Frederick L. Brandau has been made chief plant engineer at Parkersburg, succeeding Mr. Bellegia.

Death

Arthur A. Moss, senior sales specialist of The United Piece Dye Works on May 18. Mr. Moss was 57.

NOW
A "COMPLETE PACKAGE"

THE MODERN WAY TO BUY
THROWN, NATURAL OR DYED
FILAMENT YARNS

RAYON • NYLON • DACRON • ORLON

Modern standards of production efficiency and quality demand modern methods. The "complete package" — a perfectly thrown, natural or dyed package of filament yarn — prepared to your custom requirements by experts may be the ideal solution to your yarn problems.

As specialists in the exacting job of dyeing and throwing modern yarns since 1922, Hoffner is the logical choice for "complete package" service.

Why not consult us about this new way of streamlining your production and improving quality?

Hoffner RAYON COMPANY

"For that added touch of beauty"

DYERS and THROWSTERS of MODERN YARNS

General Offices at Belgrade & Ontario Streets, Philadelphia 34, Pennsylvania

Plants at Philadelphia and Quakertown, Pennsylvania

SALES REPRESENTATIVES: David F. Swain & Company, 105 W. Adams Street, Chicago 3, Ill. Shannonhouse & Wetzell, Johnston Building, Charlotte 2, N. C.

19th SOUTHERN TEXTILE EXPOSITION

October 1-5, 1956
(Monday through Friday)

TEXTILE HALL
GREENVILLE, S. C.

See on exhibit latest developments in cost cutting, quality building machinery, equipment, supplies, techniques.

Show Hours:
9 A.M. to 6 P.M.

Make your plans to attend! Room Reservations should be made in advance—Write

TEXTILE HALL
CORPORATION
GREENVILLE,
SOUTH CAROLINA

"An institution of the textile industry since 1915"

American Viscose Corp.

Effective April 2, 1956 (Revised as of May 31, 1956)

Super Rayflex

Denier	Filament	Twist	Beams	Cones
1650	980	0	$.61	$.61
1650	980	4.1Z	.61	....

Tire Yarn

1100	490	2.5Z	.62	
1650	980	0	.58	.58
1650	980	3.2Z	.58	
2200	980	0	.58	.58

High Strength

1150	490	2.5Z	.62	.62
1230	490	3.6Z	.62	.62
1650	980	3.5Z	.58	.58
1875	980	3.6Z	.58	.58

Super Rayflex, Tire Yarn and High Strength yarns are sold "Not Guaranteed for Dyeing."

Tire Fabric

1100/490/2	.72
2200/980/2	.665

Above prices based on 80% minimum Carcass, 15% maximum Top Ply, 5% maximum Breaker.

1650/980/2

* Production Factor

525	Open	Carcass	.665
300	490	Top Ply	.675
115	275**	Breaker	.70

* Determine by dividing total ends by picks.

** Orders limited to 5% total 1650 fabric booked for any given period.

SUPER RAYFLEX FABRIC

The following deposit charges are made on invoices: Add .03 to above tire fabric prices.

Beams	$55.00 each
Crates (Metal)	75.00 each
Fabric Shell Rolls	3.50 each

Same to be credited upon return in good condition—freight collect.

Terms: Net 30 days.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Super Cordura"

(all packages)

1100	480	2	$.68
1250	480	2	.68
1650	720	2	.61
1900	720	2	.61
2200	960	2	.60
2450	960	2	.60

Beams containing ends of direct dyed yarn $3.30 per end extra.

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Industrial Rayon Corp.

Effective January 27, 1956

Unbleached Bright High Tenacity Yarns

Den.	Fil.	Turns Per In.	4.4 Lb. Cones	Beams	2.2 Lb. Tubes	4.4 Lb. Tubes
1100	480	1.5 "Z"	.62	.62	.62	.62
1650	720	1.5 "Z"	.58		.58	.58

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points east of the Mississippi River.

North American Rayon Corp.

High-Strength Yarns—SUPER-NARCO		Twist	Cones	Beams
1650	720	3Z		$.61
1850	720	3Z	$.61	
Super High Strength Yarns—				
1650	720	1.5Z	.64	.64

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates if sold f.o.b delivery point.

ACETATE FILAMENT YARN

American Viscose Corp.

Current Prices

Effective December 20, 1955

Bright and Dull

* Intermediate Twist

Denier & Filaments	Cones & 4-6 Lb. Tubes	Twister Tubes	Warps	Spinning Cones	Twist Warps
55/14	$.99	$.97	$1.00	$.93	$.94
75/20	.95	.93	.96	.89	.90
100/28	.91	.89	.92	.85	.86
120/32	.82	.80	.83	.76	.77
150/41	.74	.73	.75	.69	.70
200/54	.70	.68	.71	.66	.67
300/80	.66	.64	.67	.62	.63

* Standard Twist 2¢ additional.

Celanese Corp. of America

Current Prices

Effective December 19, 1955

Bright and Dull

Denier and Filaments	Intermediate Twist 4 & 6 Lb. Cones	Beams	4 & 6-TM Tubes	4-Pound Cheeses	Spinning Twist Cones	Beams	O Twist Tubes
45/13	$1.12	$1.13	$	$	$	$1.07	$ ....
55/15	.99	1.00	....	....	.93	.94	.875
75/20	.95	.96	.93	....	.89	.90	.79
75/50	.97	.98	.95	....	....	....	.84
100/26-40	.91	.92	.89	....	.85	.86	.77
120/40	.82	.83	.81	....	.76	.77	....
150/40	.74	.75	.74	.74	.69	.70	.66
200/52	.70	.71	.70	....	.66	.67	....
300/80	66	.67	.66	....	.62	.63	.60
450/120	.64	.65	.64	....	.60	.61	....
600/160	.62	.63	.62	....	....	....	....
900/80-240	.60	.61	.60	....	....	....	.58

3 to 5 Turns on Cones or Beams ... $.02 Additional

150 Denier 12 TM Tubes ... .73

55/0/15Dull Tricot Beams ... .935

2-Pound Cheeses ... .01 Less Than 4-Pound Cheeses

2-BU and 4-BU Tubes ... Same Price as 4 and 6-Lb. Cones

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Celaperm Filament Yarn Prices

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.37	$1.38	$1.31	$1.32
75/20	1.34	1.35	1.28	1.29
100/26	1.28	1.29	1.22	1.23
120/40	1.19	1.20	1.13	1.14
150/40	1.11	1.12	1.06	1.07
200/52	1.05	1.06	1.01	1.02
300/80	1.01	1.02	.97	.98
450/120	.99	1.00	.95	.96
600/160	.97	.98	....	....
900/80	.94	....	....	....

3 to 5 Turns on Cones or Beams — $.02 Additional

Effective March 11, 1955

Celaperm Black Yarn Prices

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.17	$1.18	$1.11	$1.12
75/20	1.14	1.15	1.08	1.09
100/26	1.08	1.09	1.02	1.03
120/40	.99	1.00	.93	.94
150/40	.91	.92	.86	.87
200/52	.85	.86	.81	.82
300/80	.81	.82	.77	.78
450/120	.79	.80	.75	.76
600/160	.77	.78	....	....
900/80	.74	....	....	....

3 to 5 Turns on Cones or Beams — $.02 Additional

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Acetate

Denier & Filament	Intermediate Twist 2 & 4 Lb. 5/8" Tubes	4-6 Lb. Twist Tubes	Cones	Beams	Low Twist Cones	Beams	Zero Twist Tubes	Beams
45/13/24			1.12	1.13		1.07	1.05	
55/18/24			.99	1.00		.94	.875	.935
75/24		.93	.95	.96	.89	.90	.79	.89
75/50		.95	.97	.98			.84	
100/32		.89	.91	.92	.85	.86	.77	
100/66			.93	.94			.79	
120/40/50		.81	.82	.83	.76	.77	.73	
150/16			.78	.79			.69	
150/40		.74	.74	.75	.69	.70	.66	.69
200/60		.70	.70	.71	.66	.67	.65	
240/80			.68					
300/40/80	.66	.66	.66	.67	.62	.63	.60	.62
450/120	.64	.64	.64	.65	.60	.61		
600/80/160	.62	.62	.62	.63	.59	.60		
800/40								
900/44/70/240	.60	.60	.60	.61	.59	.60	.58	
1800/88	.61	.61	.61	.62	.60	.61	.59	
2700/132/210	.61	.61	.61	.62	.60	.61		
3200/160/210	.61		.61	.62				
5400/420					.60	.61		
6000/744								
12000/1488					.65	.66		

A. 1# 5/8" Tubes—add .02 to 2 & 4 lb. 5/8" Tubes Price.

B. Regular Twist (3 thru 5 t.p.i.)—add .02 to Intermediate Twist Price.

C. 2 lb. Twisted Tubes—.01 less than 4 & 6 lb. Twisted Tubes on 150-200-300 Denier Intermediate Twist.

Silk Dyeing

(Continued from page 63)

The following is a summary of the dyeing characteristics of silk when combined with the other fibers.

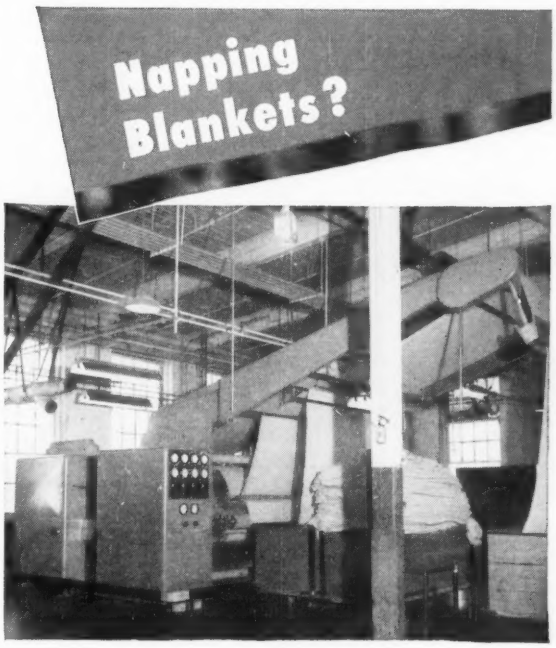
Acetate and Silk	Can dye union. Silk can be dyed any color, leaving acetate white. Silk can be dyed any color, or white, with acetate dyed Navy or Black. Some other combinations possible.
Acrilan and Silk	Cannot get a good union. Silk can be dyed leaving Acrilan relatively unstained. Cannot reverse.
Dacron and Silk	Can get a good union but not recommended in darker shades as silk may be damaged under dyeing conditions necessary. Silk can be dyed, leaving Dacron white. Dacron can be dyed, leaving silk white. Can get limited color and color combinations.
Dynel and Silk	Cannot get a good union. Cross-dye effects limited.
Nylon and Silk	Most all unions can be dyed. Silk can be dyed, leaving nylon-white. Nylon can be dyed, leaving silk white or dyeing silk any color.
Orlon 42 and Silk	Cannot dye union. Silk can be dyed, leaving Orlon undyed. Cannot cross-dye color and color.
Viscose and Silk	Can be union or cross-dyed any color or white.
Wool and Silk	Can dye union or cross-dye. Necessarily general in nature, percentages or arrangement of the yarns may preclude good results so specific ideas should be discussed with a good dyer.

Chemical or resin finishes are not required on filament silk but they are effectual when the other components of a fabric are the fibers to which these finishes are usually applied. In fact, the application of resin finishes has greatly increased the use of silk noils blended with other fibers. Most important, tweedy type silk suitings made of 100% spun tussah or noiles with its limp, unappealing hand have been in greater demand because of the crisp resilience imparted by chemical finishes. The application of durable water repellents provides an added feature for either suitings or coatings.

Reverting to skein dyeing for a moment, we find the soap-foam method of degumming gives best results. This machine, designed solely for the purpose, employs the use of soap foam or bubbles circulating slowly through the silk to remove the gum. Not only are cleaner, brighter results obtained but the delicate threads are left in much better condition than when the silk is moved through the hot, slimy gum-soap liquor.

Logwood black still produces the deepest shade and the standard to which all other blacks are compared. Further, the process adds weight and body to the thread and, since this is an inherent part of the

(Continued on page 79)



Only EXACT Controllable Power

can produce the effect you want, so quickly

The face and back Hi-Torc Blanket Napper you see here — built by Gessner to nap opposite sides in ONE run — gets into the fabric to the proper depth and rapidly plucks from the start.

Hydraulically operated, the Hi-Torc Napper in tandem produces immediate and controlled power to obtain the precise napping effect you desire. The entire napping range is pin-pointed on the panel dials in front of the operator. Once the amount of napping energy is indicated in terms of pounds of pressure, then this energy can be maintained, run after run, day after day, regardless of heat and cold, humidity changes, dirt or flock — all enemies of ordinary napping power transmission.

Gessner has made possible the control of the cloth tension and the napping effect of both machines from this one panel. Instead of multiple runs, a single breaking, raising and finishing run on this Hi-Torc machine produces a finished blanket.

Hi-Torc is making blanket history. May we tell you more about it?

DAVID GESSNER CO.

WORCESTER, MASS.

Canadian Representative: W. J. Westaway
Montreal, Quebec; Hamilton, Ont.

Gessner takes the guesswork out of napping.

Color-Sealed

Denier	Intermediate Twist Twisted Tubes 2 Lb.	4 & 6 Lb.	Cones	Beams	Low Twist Cones	Beams	Zero Twist Tubes	Beams
55/18-24			1.37	1.38	1.31	1.32	1.245	1.315
75/24			1.34	1.35	1.28	1.29	1.18	1.28
100/32	1.26	1.26	1.28	1.29	1.22	1.23	1.14	
150/40	1.10	1.11	1.11	1.12	1.06	1.07	1.03	1.06
200/60	1.04	1.05	1.05	1.06	1.01	1.02	1.00	
300/40-80	1.00	1.01	1.01	1.02	.97	.98	.95	.97

A. Regular Twist—add .02 to intermediate twist prices.

Black

Denier	Intermediate Twist 2 & 4 Lb. ⅝" Twisted Tubes	4 & 6 Lb. Twisted Tubes	Cones	Beams	Low Twist Cones	Beams	Zero Twist Tubes	Beams
55/18-24			1.17	1.18	1.11	1.12	1.045	1.115
75/24		1.12	1.14	1.15	1.08	1.09	.98	1.08
100/32		1.06	1.08	1.09	1.02	1.03	.94	
150/40		.91	.91	.92	.86	.87	.83	.86
200/60		.85	.85	.86	.81	.82	.80	
300/40-80	.81	.81	.81	.82	.77	.78	.75	.77
450/120	.79		.79	.80	.75	.76		
600/80-160	.77		.77		.73			
800/40								
900/44-70-240								
1800/88	.74		.74		.73			
2700/132-210	.74		.74		.73			
3000/210								
3200/160	.74		.74					
5400/420					.73			
6000/744								
12000/1488					.78			

A. Regular Twist (3 thru 5 t.p.i.)—add .02 in intermediate twist prices.

B. 2 lb. Twisted Tubes are the same as 4 & 6 lb. except on 150-200 and 300 denier intermediate twist where the price is .01 less.

C. 1 lb. ⅝" Tubes—add .02 to 2 and 4 lb. ⅝" Tubes.

Terms: Net 30 Days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective December 19, 1955

Estron Yarn, Bright or Dull — White

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Tubes	Beams	Low Twist Cones	Beams	Tubes Twist Zero
55/13	$1.01	$0.99	$0.97	$1.00	$0.93	$0.94	$0.87½
75/19	.97	.95	.93	.96	.89	.90	.79
75/49	.99	.97	.95	.98			
100/25	.93	.91	.89	.92	.85	.86	.77
120/30	.86	.84	.82	.85	.78	.79	
150/38	.76	.74	....	.75	.69	.70	.66
200/50	.72	.70	....	.71	.66	.67	
300/75	.68	.66	....	.67	.62	.63	.60
450/114	.66	.64	....	.65	.60	.61	
600/156	.64	.62	....	.63	.59	.60	.60
900/230	.62	.60	....	.61	....	....	.58
900 & Heavier	....	....	....	....	....	....	.58

Current Prices

Chromspun—Standard Colors (Except Black)

Denier & Filament	Regular Twist Cones	Beams	Intermediate Twist Cones	Beams	Low Twist Cones	Beams
55/13	$1.39	$1.40	$1.37	$1.38	$1.31	$1.32
75/19	1.36	1.37	1.34	1.35	1.28	1.29
100/25	1.30	1.31	1.28	1.29	1.22	1.23
150/38	....	....	1.11	1.12	1.06	1.07
300/75	....	....	1.01	1.02	.97	.98
450/114	....	....	.99	1.00	.95	.96
900/230	....	....	.94	.95	....	....

Current Prices

Chromspun—Black

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Beams	Low Twist & Spun Twist Beams
55/13	$1.19	$1.17	$1.18	$1.12
75/19	1.16	1.14	1.15	1.09
100/25	1.10	1.08	1.09	1.03
150/38	.93	.91	.92	.87
200/50	.87	.85	.86	.82
300/75	.83	.81	.82	.78
450/114	.81	.79	.80	.76
900/230	.76	.74	.75	....

Prices are subject to change without notice.

Prices on special items quoted on request.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in the United States east of Mississippi River. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

RAYON STAPLE and TOW

American Viscose Corp.

Effective July 26, 1954

Rayon Staple

	Bright and Dull
Regular	$ .34
Extra Strength	
1.0 Denier	.38
"Viscose 32A"	.38
"Avisco Crimped"	
1.25 Denier	.36
3.0 & 5.5 Deniers	.35
8.0 & 15.0 Deniers	.37
"Avisco Smooth"	
8.0, 15.0 & 22.0 Deniers	.39
Short Staple Blend	.36

Rayon Tow

Grouped Continuous Filaments (200,000 Total Denier)	
1.5, 3.0 & 5.5 Denier Per Filament	.36
9.0 Denier Per Filament	.38
Grouped Continuous Filaments (4400/3000 & 2200/1500)	.65

Prices of other descriptions on request.
Terms: Net 30 days.

Celanese Corp. of America

Current Prices

Rayon Tow

	Bright & Dull
1.5, 3, 5 D.P.F.	.34
8 D.P.F.	.36

Courtaulds (Alabama) Inc.

Effective April 23, 1956

Rayon Staple

	Bright	Dull
1½ and 3 denier	$.31	$.31

Available in 1⅛", 1-9/16" and 2".

"Coloray" Spun Dyed Rayon Staple

	1½ Den. 1-9/16"	3 Den. 2"	4½ Den. 6"	Price per Lb.
	(Code numbers for color and denier)			
Black	1404	1419	1425	37¢
Tan	8004	8019	8025	39¢
Medium Brown	8804	8819	8825	39¢
Silver Grey	1004	1019	1025	39¢
Terra Cotta	8204	8219	8225	39¢
Khaki	3004	3019	3025	40¢
Dark Brown	8604	8519	8525	40¢
Slate Grey	0804	0819	0825	43¢
Light Blue	4004	4019	4025	44¢
Sulphur	2004	2019	2025	44¢
Apple Green	5104	5119	5025	45¢
Peacock Blue	4604	4619	4625	46¢
Medium Blue	4204	4219	4225	48¢
Dark Blue	4404	4419	4425	49¢
Hunter Green	5404	5419	5425	49¢
Indian Yellow	2504	2519	2525	49¢
Pink	6004	6019	6025	50¢
Turquoise	4804	4819	4825	50¢
Malachite Green	5204	5219	5225	51¢
Red	7004	7019	7025	56¢

(In addition to the above, Black is also available in:
1½ den. 1⅛" (1401) 3 den. 1-9/16" (1416) 4½ den. 2"
3 den. 1⅛" (1413) 3 den. 2½" (1420) 4½ den. 4")

Terms: Net 30 days, f.o.b. LeMoyne, Alabama. Minimum transportation allowed to points in U.S.A. east of Mississippi River.

The Hartford Rayon Co.

Div. Bigelow-Sanford Carpet Co., Inc.

Rayon Staple

Effective February 8, 1956

REGULAR

1.5 denier Bright
1½" and 2" ..... 32¢

VISCALON 66 (Crimped)

8 denier 2" Bright ..... 35¢
15 denier 3" Bright ..... 35¢
15 denier 3" Dull ..... 35¢

"KOLORLOK"—Solution Dyed Rayon Staple—15 denier 3"

	Bright	Dull
Cloud Grey	45¢	45¢
Sandalwood	45¢	45¢
Nutria	45¢	45¢
Sea Green	45¢	45¢
Mint Green	45¢	45¢
Champagne	45¢	45¢
Café Brown	55¢	....
Midnight Black	45¢	....
Gold	45¢	45¢
Turquoise	45¢	45¢

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

An Invitation To Textile Executives

Textile executives are invited to explore the advantages of Membership in Textile Distribution Group. The purpose of this newly formed Group is to provide its Members with professional research services at a moderate cost.

Professional services, such as diagnosis and consultation on specific problems of textile economics, sales and merchandising, are usually available to textile executives only at a relatively high cost. Textile Distribution Group, by broadening the availability of research results, is able to provide its Members with these professional services at a very moderate cost. Members are entitled to receive confidential reports on individual problems, as well as the regular Research Reports sent to all Members on problems of general interest.

The affairs and activities of Textile Distribution Group are administered by A. W. Zelomek Associates, Inc., in behalf of Members and their research needs. Research activities for the Group are under the personal direction of A. W. Zelomek, President, and Dr. Robert C. Shook, Vice-President. The administrative staff encompasses a continuity of more than 30 years of consultive experience in textile economics and marketing.

Inquiries are invited, and will incur no obligation.

A. W. ZELOMEK ASSOCIATES, INC.
350 Fifth Avenue, New York 1, N. Y.
Wisconsin 7-9272

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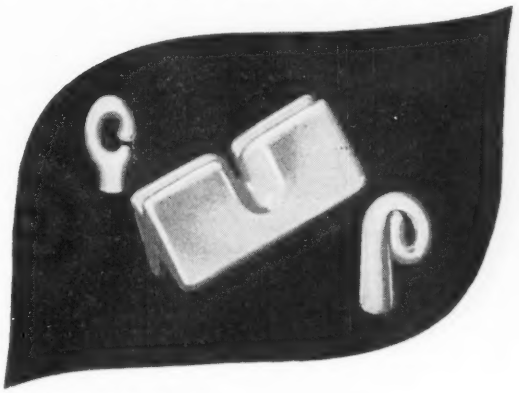
we cannot back into the future.



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AND MANUFACTURING COMPANY
LAMBERTVILLE NEW JERSEY

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*U. S. Patent 2,625,343
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ENGINEERED Plastics
INCORPORATED
Gibsonville, North Carolina

ACETATE STAPLE and TOW

Celanese Corp. of America

Current Prices

Staple

Celanese Acetate Staple	Bright & Dull
2, 3, 5.5 & 8 Individual Deniers	$.32
12 & 17 Individual Deniers	.33
35 & 50 Individual Deniers	.36
Variable Acetate Fibers	.30
35 Individual Denier Flat Filament Acetate	.38

Tow

Celanese Celatow Acetate	Bright & Dull
2, 3, 5.5 & 8 Individual Deniers	$.34
12 & 17 Individual Deniers	.35
35 & 50 Individual Deniers	.37

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.

All previous prices withdrawn.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective October 31, 1955

Estron Staple

Deniers per Filament	Bright and Dull
2, 3, and 5	$.32 per lb.

Prices are subject to change without notice.

Prices on special items quoted on request.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in the United States east of Mississippi River. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

NON CELLULOSIC YARN

ACRYLIC

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Orlon"

	1st Grade	2nd Grade
75 denier, 30 filaments	$2.65	$2.35
100 denier, 40 filaments	2.35	2.10
200 denier, 80 filaments	2.25	2.00

Terms: Net 30 days.

These prices are subject to change without notice.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

NYLON

Allied Chemical and Dye Corporation

"Caprolan" Tensile Tough Nylon

Effective March 19, 1956

Heavy Yarns

Denier	Filament	Turn/in.	Type**	Package	Price/Lb.
2100	6 d/f	Nominal	HB	Parallel Paper Tube*	$1.27
2500	6 d/f	Nominal	HB	Parallel Paper Tube	1.27
3360	6 d/f	Nominal	HB	Parallel Paper Tube	1.26
5000	6 d/f	Nominal	HB	Parallel Paper Tube	1.25
7500	6 d/f	Nominal	HB	Parallel Paper Tube	1.24
10,000	6 d/f	Nominal	HB	Parallel Paper Tube	1.24
15,000	6 d/f	Nominal	HB	Parallel Paper Tube	1.23

Terms—Net 30 days.

These prices are subject to change without notice. All prices are quoted f.o.b. shipping point.

Lowest freight cost prepaid or allowed east of Mississippi River.

* Parallel Paper Tubes non-returnable, no charge.

** Type is used to describe luster and tenacity.

Type HB: High Tenacity, Bright.

American Enka Corporation

Nylenka Filament Yarn Prices

Effective March 16, 1956

Denier & Filament	Twist	Luster	Type	Tenacity	Package	Yarn Weight per Package	Price per Pound, Std.	Price per Pound, Sub.
15/1	0.5Z	semi-dull	9408	Normal	Pirn	1 lb.	$5.00	$4.80
30/6	0.5Z	semi-dull	9412	Normal	Pirn	2 lb.	2.25	2.10
30/8	0.5Z	semi-dull	9424	Normal	Pirn	2 lb.	2.25	2.10
40/8	0.5Z	semi-dull	9426	Normal	Pirn	2 lb.	1.90	1.75
50/13	0.5Z	semi-dull	9442	Normal	Pirn	2 lb.	1.80	1.70
100/32	0.5Z	semi-dull	9652	Normal	Pirn	2 lb.	1.60	1.55
200/34	0.5Z	bright	9822	Normal	Pirn	2 lb.	1.45	1.40
200/34	0.5Z	bright	9222	Normal	Cone	4 lb.	1.45	1.40
210/34	0.5Z	bright	9204	High	Pirn	2 lb.	1.45	1.40
210/34	0.5Z	bright	9214	High	Cone	4 lb.	1.45	1.40
840/140	0.5Z	bright	9202	High	Pirn	2 lb.	1.30	1.20
840/140	0.5Z	bright	9208 9228	High	Cone	4 lb.	1.30	1.20
840/140	0.5Z	bright	9302	High	Beam	—	1.30	1.20

Pirns charged at $.25 each. Deposit refunded upon return of pirn in good condition. Cones are non-returnable. Beams and cradles are deposit carriers and remain property of American Enka Corporation.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

The Chemstrand Corp.

Current Prices

Denier	Filament	Twist	Type*	Package	Standard Price/lb.	Second Price/lb.
10	1	O	SD	Bobbins	$8.00	$7.60
15	1	O	SD	Bobbins	5.00	4.80
15	3	Z	SD	Bobbins	5.00	4.80
20	7	Z	SD	Bobbins	2.75	2.55
30	10	Z	SD	Bobbins	2.25	2.10
40	7	Z	SD	Bobbins	2.00	1.75
40	13	Z	SD	Bobbins	1.90	1.75
40	13	Z	D	Bobbins	1.95	1.75
50	17	Z	SD	Bobbins	1.80	1.70
70	34	Z	SD	Bobbins	1.60	1.55
70	34	Z	B	Bobbins	1.60	1.55
70	34	Z	HB	Bobbins	1.65	1.55
100	34	Z	SD	Bobbins	1.60	1.55
100	34	Z	HB	Bobbins	1.65	1.55
140	68	Z	SD	Bobbins	1.55	1.50
200	34	Z	B	Bobbins	1.45	1.40
210	34	Z	HB	Bobbins	1.45	1.40
260	17	Z	HB	Bobbins	1.45	1.35
840	140	Z	HB	Beams	1.30	1.20
840	140	Z	HB	Tubes	1.30	1.20

Terms: Net 30 days.

Lowest transportation paid to destination east of Mississippi River.

Note: All Standard Quality Yarn—No break.

Bobbins, tubes, beams, and crates for beams become the property of the yarn purchaser. Bobbins are invoiced at 25¢ or 45¢ each, depending on type; tubes are invoiced at 40¢ each; and beams and crates for beams are invoiced at $220 and $25 respectively.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Yarn

Denier	Filament	Turn/In.	Twist	Type*	Package	1st Grade	2nd Grade
7	1	0	O	200	Bobbin	$9.00	$8.55
10	1	0	O	200	Bobbin	8.00	7.60
12	1	0	O	200	Bobbin	7.00	6.65
12	4	¼	Z	200	Bobbin	7.00	6.65
15	1	0	O	200	Bobbin	5.00	4.80
15	1	0	O	670/680	Bobbin	5.05	4.80
15	3	¼	Z	200	Bobbin	5.00	4.80
20	1	0	O	200	Bobbin	4.00	3.80
20	7	½	Z	200	Bobbin	2.75	2.55
20	7	½	Z	670	Bobbin	2.80	2.55
20	20	¾	Z	209	Bobbin	6.00	
30	10	½	Z	100/200	Bobbin	2.25	2.10
30	10	½	Z	670/680	Bobbin	2.30	2.10
30	26	½	Z	200	Bobbin	2,35	2.15
40	1	0	O	100/200	Bobbin	3.50	3.30
40	7	½	Z	200	Bobbin	2.00	1.75
40	13	½	Z	100/200	Bobbin	1.90	1.75
40	13	½	Z	400	Bobbin	2.00	1.85
40	13	½	Z	670/680	Bobbin	1.95	1.75
40	34	½	Z	200	Bobbin	2.00	1.80
50	7	½	Z	200	Bobbin	1.90	1.70
50	17	½	Z	200	Bobbin	1.80	1.70
50	17	½	Z	670	Bobbin	1.85	1.70
60	20	½	Z	200	Bobbin	1.70	1.60
70	17	½	Z	100/200	Bobbin	1.60	1.55
70	34	½	Z	100/200	Bobbin	1.60	1.55
70	34	½	Z	300	Bobbin	1.65	1.55
70	34	½	Z	670/680	Bobbin	1.65	1.55
80	26	½	Z	200	Bobbin	1.60	1.55
80	68	½	Z	200	Bobbin	1.65	1.55
100	34	½	Z	100/200	Bobbin	1.60	1.55
100	34	½	Z	300	Bobbin	1.65	1.55
100	34	½	Z	680	Bobbin	1.65	1.55
100	50	½	Z	200	Bobbin	1.60	1.55
140	68	½	Z	100/200	Bobbin	1.55	1.50
140	68	½	Z	300	Bobbin	1.60	1.50
200	34	¾	Z	100	Bobbin	1.45	1.40
200	34	¾	Z	680	Bobbin	1.50	1.40
200	68	¾	Z	200	Bobbin	1.45	1.35
210	34	¾	Z	300	Bobbin/Beam	1.45	1.40
260	17	1	Z	100	Bobbin	1.45	
260	17	1	Z	300	Bobbin	1.45	1.35
400	68	¾	Z	100	Bobbin	1.35	1.25
420	68	¾	Z	300	Bobbin	1.35	1.25
800	140	½	Z	100	Bobbin	1.35	1.25
840	136	¾	Z	300	Bobbin	1.30	1.20
840	140	½	Z	300	Alum. Tube/Beam	1.30	1.20
Industrial Yarn						**Price/Lb.**	
2100	340	0	O	300	Paper Tube	1.27	
2520	420	0	O	300	Paper Tube	1.27	
5040	2520	0	O	300	Paper Tube	1.25	
15120	2520	0	O	300	Paper Tube	$1.23	

These prices are subject to change without notice.

Terms—Net 30 Days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Following are invoiced as a separate item:

Bobbins at 25 cents or 45 cents each depending on type.

Aluminum Tubes at 40 cents each.

Beams (Domestic Price) at $220.00 each.

Cradles (Domestic Price) for Beams at $115.00 each.

(Beams and Cradles are deposit carriers and remain the property of E. I. du Pont de Nemours & Co.)

Types

* Type is used to describe luster, tenacity, and size or oil content.

Type 100 Bright, normal tenacity.

Type 200 Semidull, normal tenacity.

Type 209 Semidull, normal tenacity, #S-139 spin finish.

Type 300 Bright, high tenacity.

Type 400 Semidull, high tenacity.

Type 670 Dull, normal tenacity.

Type 680 Dull, normal tenacity.

Silk Dyeing

(Continued from page 75)

process, the F.T.C. permits this increase up to 15% to be labeled "pure dye."

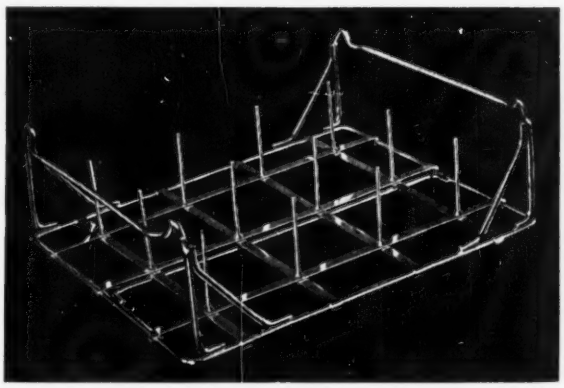
In these days when washability and wear are important features, silk is not in the background. In the last few years remarkable improvements have been made in producing faster colors. No one expects the fiber to be used for auto tops on convertibles, but a range of colors can be dyed to stand 100 hours in the Fadeometer and 140° soap in the launderometer without resorting to vat dyes that are expensive and present an ageing problem. But these dyes are ideally suited for home furnishings and are well worth the slight additional cost.

In conclusion, it can be said that it is possible to have silk bright, semi-dull or dull. It can be used as the finest multi-filament thread available, or as coarse as any apparel thread required. It can be even or slubbed-effect. It can be dyed or cross-dyed.

International Conference

The International Rayon & Synthetic Fibres Committee, Paris, is sponsoring a three-day conference on Fabric Quality and Informative Labeling to be held in Gothenburg, Sweden starting October 1st.

J. B. Goldberg, consultant, will address the opening session on "Informative Labeling and Quality Control in the U. S. A." Other American speakers are E. Freedman, Macy's Bureau of Standards, and L. Leach, Du Pont Co., who will speak on "The Exercise of Quality Control in Department Stores" and "Comfort Factors in Wearing Apparel," respectively.



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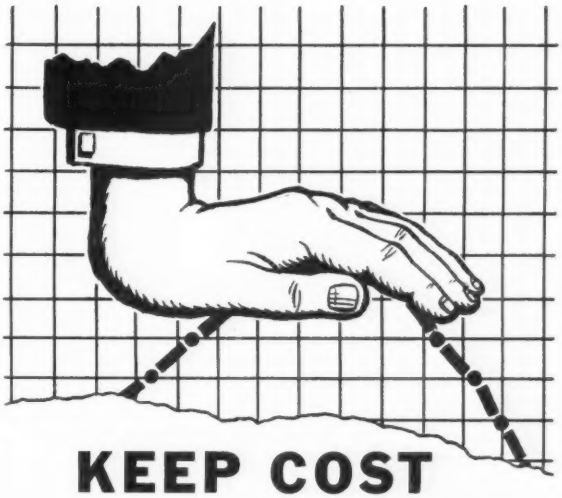

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MOH's hardness 9.5 — Water absorption O.O. impervious
Specific Gravity 3.80 — Safe operating temperature °C 1500 °F 2800

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NEW HAVEN 3, CONNECTICUT

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AMERICAN SUPPLY CO., CENTRAL FALLS, R. I.

POLYESTER

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"

Den.	Fil.	Twist	Luster	Type	Tubes 1st Gr.
30	20	0	Dull	5700	$2.75
40	27	0	Semi-Dull	5600	2.30
40	27	0	Dull	5700	2.35
70	14	0	Bright	5500	1.90
70	34	0	Semi-Dull	5600	1.90
70	34	0	Bright	5500	1.90
70	34	0	Dull	5700	1.95
150	68	0	Semi-Dull	5600	1.80
220	50	0	Bright	5100	1.75
250	50	0	Bright	5500	1.75
1100	250	0	Semi-Dull	5900	1.50
1100	250	0	Bright	5100	1.50

Terms: Net 30 Days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Yarn Types

5100 Bright High Tenacity
5600 Semi-Dull Normal Tenacity
5700 Dull Normal Tenacity
5500 Bright Normal Tenacity
5900 Semi-Dull High Tenacity

Tubes are invoiced as a separate item at $.50, $.70, or $.80 each and are returnable for credit.

* Trademark for du Pont's polyester fiber.

NON CELLULOSIC STAPLE & TOW

ACRYLIC

The Chemstrand Corp.

Current Prices

"Acrilan"

2.0 denier Semi-dull staple and tow	$1.18
3.0 denier Bright & Semi-dull staple and tow	1.12
5.0 denier Bright & Semi-dull staple and tow	1.12
Hi-Bulk staple Semi-dull	1.12

Terms: Net 30 days. Freight prepaid to points east of the Mississippi River.

Carbide and Carbon Chemicals Co.

Div. Union Carbide and Carbon Corp.

Textile Fibers Dept.

Effective November 1, 1955

Dynel Staple

Natural Dynel

3, 6, 12, and 24 Denier, Staple and Tow ..... $1.05 per lb.

Whitened Dynel, and Dynel Spun with Light Colors: Blonde, or Gray

3 and 6 Denier, Staple and Tow ..... 1.20 per lb.

Dynel Spun with Dark Colors: Black, Charcoal, and Brown

3 and 6 Denier, Staple and Tow ..... 1.30 per lb.

Prices are quoted f.o.b. South Charleston, W. Va.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Orlon" Acrylic Staple & Tow

Denier	Price 1st Grade
2.0 Denier	$1.30
3.0 Denier	1.25
3.0 Denier Color-sealed Black—Staple only	1.60
4.5 Denier	1.20
6.0 Denier	1.20

Staple Lengths—1½", 2", 2½", 3", 4½".

High Shrinkage Staple same price as Regular Staple.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

NYLON

American Enka Corp.

Nylenka (Nylon Six Staple)

Denier	Luster	Length (Inches)	Price per pound
3	semi-dull	1⅛, 1½, 2, 2⅝, 3, 4½	$1.25
6	bright	3, 4½	1.25
8	bright	2⅝	1.20
10	bright	3	1.20
15	bright	3	1.20

Deniers and lengths of staple not listed above are available upon special request.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Staple and Tow

Denier	Length	Type*	Price/Lb.
1.5	1⅛"—1½"—2½"—4½"	100/200	$1.30
1.5	1⅛"—1½"—2½"—4½"	101/201	1.32
3.0	1⅛"—1½"—2"—2½"—3"—4½"	100/200	1.25
3.0	1⅛"—1½"—2"—2½"—3"—4½"	101/201	1.27
6.0	1⅛"—1½"—2"—2½"—3"—4½"	100/200	1.25
6.0	1⅛"—1½"—2"—2½"—3"—4½"	101/201	1.27
15.0	1½"—3"—4½"—6½"	100	1.20
15.0	1½"—3"—4½"—6½"	101	1.22

Tow price same as Staple for:

1.5 denier type 200 in 330,000 total denier
1.5 denier type 201 in 350,000 total denier
3.0 denier type 100/200 in 430,000 total denier
3.0 denier type 101/201 in 455,000 total denier
6.0 denier type 100 in 330,000 total denier
6.0 denier type 101 in 345,000 total denier
15.0 denier type 100 in 330,000 total denier
15.0 denier type 101 in 350,000 total denier

These prices are subject to change without notice.

Terms: Net 30 Days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Types

* Type is used to describe luster, tenacity, not crimpset, or crimpset.

Type 100 Bright, normal tenacity, not crimpset.
Type 101 Bright, normal tenacity, crimpset.
Type 200 Semi-dull, normal tenacity, not crimpset.
Type 201 Semi-dull, normal tenacity, crimpset.

Industrial Rayon Corp.

Effective April 9, 1956

Nylon Staple

1.5 denier	$1.30 per lb.
2, 3 and 6 denier	1.25 per lb.
8 and 15 denier	1.20 per lb.

Bright and semi-dull, required length.

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points east of the Mississippi River.

POLYESTER

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron" Staple and Tow

Den.	Luster	Type	Staple Length	Tow Bundle	1st Gr.
1.5	Semi-Dull	5400	1½"-4½"	385M	$1.40
3.0	Semi-Dull	5400	1½"-4½"	385M	1.35
4.5	Semi-Dull	5400	1½"-4½"	385M	1.35
6.0	Semi-Dull	5400	1½"-4½"	385M	1.35

Terms: Net 30 Days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

POLYVINYL ACETATE

American Viscose Corp.

Effective October 1, 1950

Vinyon Staple

3.0 denier ½" unopened	$.80 per lb.
3.0 denier 1¼", 2" opened	.90 per lb.
5.5 denier 1", 3½" opened	.90 per lb.

Terms: Net 30 days.

You can kill two Birds with one Stone!

Our SEPTEMBER ISSUE will be "DOUBLE-BARRELLED" this year!

Bird No. 1

Modern Textile Magazine's September issue will be our annual Man-made Fibers Progress Review and Forecast issue. It will present our usual broad review of ALL new developments in ALL man-made fibers during the preceding 12 months. And it will contain a carefully prepared FORECAST OF NEW THINGS ahead for the man-made fibers with special emphasis on the new fabrics and other end uses coming over the horizon.

Bird No. 2

Also and equally important, MTM's September issue will contain a complete PREVIEW of the Southern Textile Exposition at Greenville, S. C., October 1-5. Our coverage of the show will include a list of exhibitors and the products they will show. We will also list the names of men who will be in attendance. And we will provide a floor plan of the Exposition along with many more details of what will be available at the show for you to see.

With these double-barrelled editorial contents, readership of our September issue will be especially wide and intense. Your advertisement will thus get MAXIMUM EXPOSURE to key men in textiles——men who make buying decisions for the things you have to sell.

Wire at once to reserve your space in MTM's big September issue. Forms close August 5, 1956.

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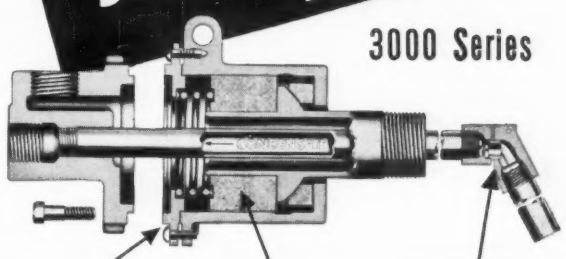

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Charlotte Fibre Co.

Exclusive Agents for Snia Viscosa Italy "Merinova"

Effective January 1, 1954

Merinova Staple

3 Denier 1-9/16", 2-½" and 3"	$.81
5 Denier 1-1/16", 1-9/16", 2-½", 4" and 6"	.81
9 Denier 4"	.81
18 Denier 6", 2-½"	.81
60 Denier 14"	.85

Other lengths or deniers can be produced as requested.
Solution-dyed Merinova staple fiber.

Light colors	.90 per lb.
Medium colors	.95 per lb.
Dark colors	1.00 per lb.
French Combed Tops	1.10

Terms: Net 30 days. All prices are duty paid, landed free, freight prepaid to rail point nearest destination.

Virginia-Carolina Chemical Corp.

Fiber Division

Effective January 15, 1951

"Vicara" Staple

	Standard Crimp	Highly Crimped
3 Denier	$1.00 per lb.	$1.05 per lb.
5 Denier	1.00 per lb.	1.05 per lb.
7 Denier	1.00 per lb.	1.05 per lb.

Bleached "Vicara" Staple

	Standard Crimp	Highly Crimped
3 Denier	$1.10 per lb.	$1.15 per lb.
5 Denier	1.10 per lb.	1.15 per lb.
7 Denier	1.10 per lb.	1.15 per lb.

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Supplied in staple lengths or as continuous tow (270,000 filaments).
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Prices f.o.b. Taftville, Conn. on 10% moisture regain basis.

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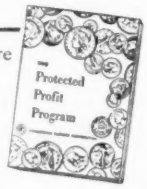

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APPLICATIONS DEVELOPMENT ENGINEER

Unusual opportunity with Celanese in lovely Charlotte, North Carolina, for an applications development engineer, age 25 to 35. It requires a BS in Chemistry or Chemical Engineering (higher degree preferred) with 1 to 5 years experience.

Duties will be to aid in the development of new and improved non-woven applications and end products from present and future Celanese fibers, including collaboration with members of other areas in the applications and product development department, marketing department and customers of the Textile Division. The man selected will have the authority to act, contribute to and to control an experimental program within the scope of the assigned projects.

The salary will be commensurate with experience and background—the employee benefit program is liberal.

Please send complete resume to Mr. L. H. Hitchens.

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Calendar of Coming Events

July 9-13—Gordon Research Conference on Textiles, Colby Junior College, New London, N. H.

Aug. 20-31—MIT Textile Technology Summer Program, Cambridge, Mass.

Sep. 5—AATT monthly meeting, Vanderbilt Hotel, New York, N. Y.

Sep. 6-7—The Fiber Society Fall meeting, Warwick Hotel, New York, N. Y.

Sep. 10-15—Perkin Centennial, Waldorf Astoria, New York, N. Y.

Sep. 11—Synthetic Organic Chemical Manufacturers Association meeting, Hotel Roosevelt, New York, N. Y.

Sep. 13-15—AATCC National Convention, Waldorf Astoria, New York, N. Y.

Sep. 16-22—ASTM Pacific Coast meeting, Hotel Statler, Los Angeles, Calif.

Sep. 17-21—Instrument Society of America conference and exhibit, Coliseum, New York, N. Y.

Sep. 26-28—Lowell Technological Institute Perkin Centennial observance and open house, Lowell, Mass.

Sep. 27-28—Combed Yarn Spinners Association, Virginia Beach, Va.

Sep. 27-28—National Association of Cotton Manufacturers annual meeting, Portsmouth, N. H.

Sep. 27-28—Northern Textile Association, annual meeting, Portsmouth, N. H.

Oct. 1-5—Southern Textile Exposition, Textile Hall, Greenville, S. C.

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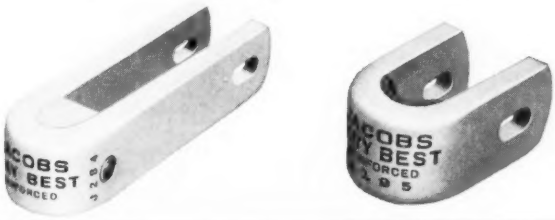

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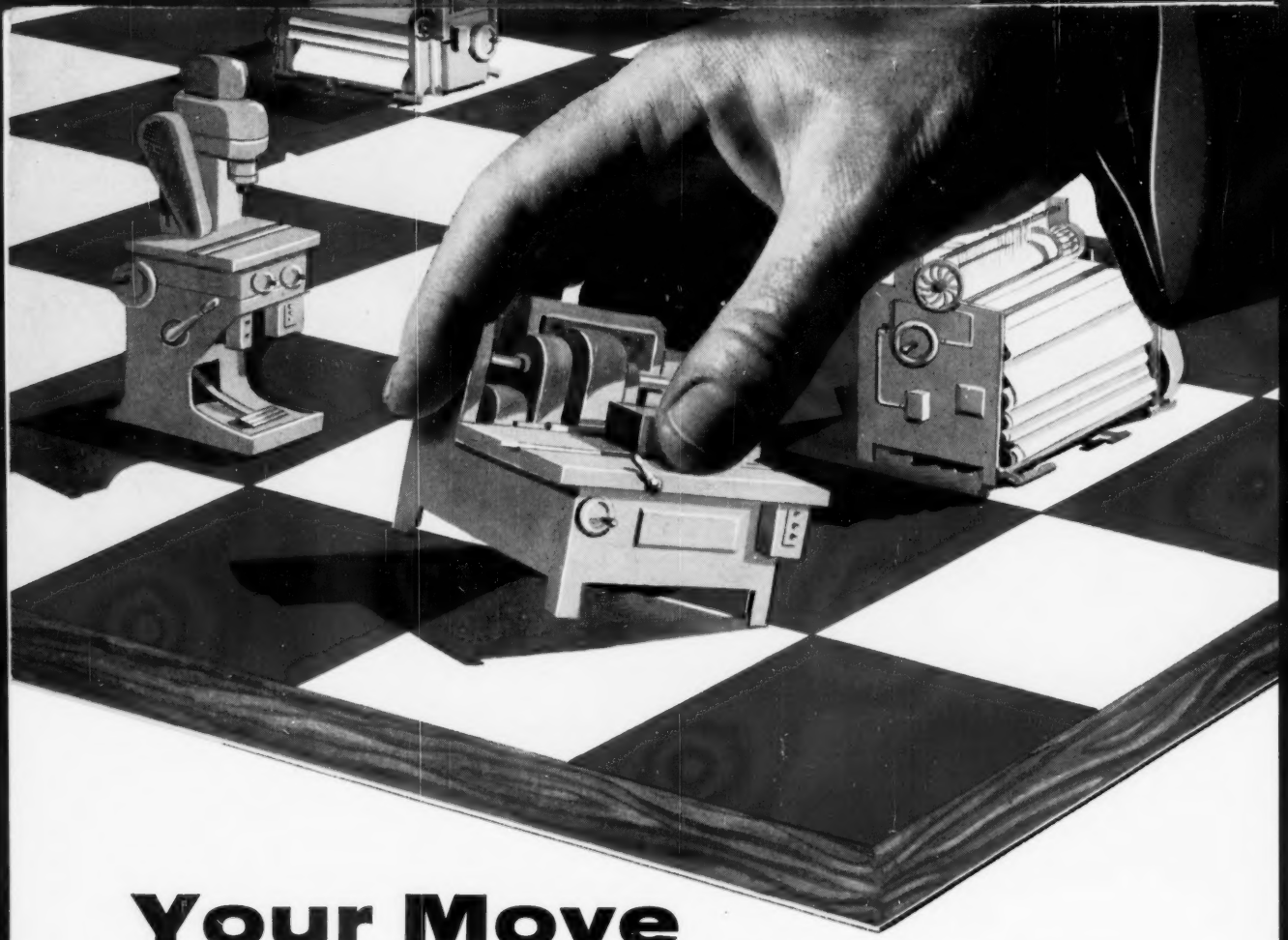

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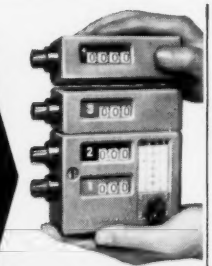
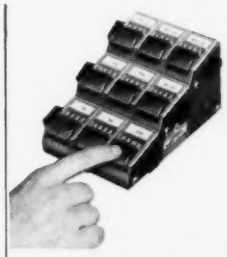
. . . and here's why it's wise to make sure all your New Machines are equipped with NEW VEEDER-ROOT COUNTERS . . .

Modern Veeder-Root Counters . . . for looms, frames, knitting machines and all types of textile mill equipment . . . are built with unmatched Veeder-Root know-how and quality to give accurate facts-and-figures through years of trouble-free service. Count on Veeder-Root for *closest Countrol* of production and uniformity. Write Veeder-Root for all your counter needs.



2-3-4 Convertible Counters for looms, frames, knitting machines, etc.

Loom Cut Meters for controlling uniform cuts of cloth.



Vary-Tally Multiple Unit Reset Counters for inventory, inspection, and 1,001 other hand-counting jobs.

Double-Wheel Linear Counter for indicating lengths in feet, yards, etc.